Clinical Observations ON SURGICAL CASES.

BY

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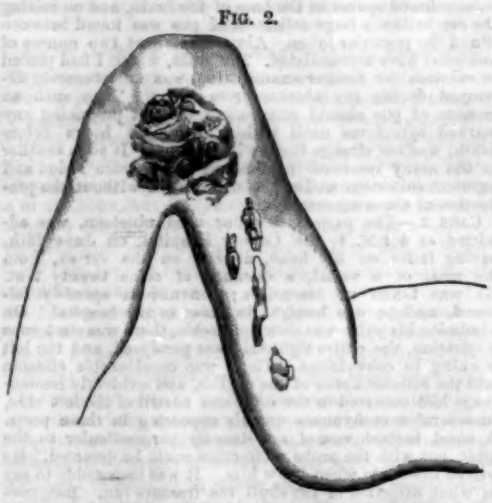
(Concluded from p. 3.)

CONTRACTED KNEE-JOINT WITH GREAT DEFORMITY.

IN THE LANCET of May 24th, 1879, I published a few cases of tenotomy of the hamstring tendons, with antiseptic treatment by Callender's method, of this joint. In one of these cases I had a splendid result, the other child, though the joint was straightened, sank ultimately from tabes and prolonged discharge. Recently I had such a case in which aspiration of the joint, abscess, and subsequent washings out with disinfectant solution, and final enlargement of the opening, with complete rest to the joint and gradual extension without tenotomy, was dismissed from hospital cured. But the most remarkable instance of perfect recovery after extreme deformity I have ever known, is that one briefly referred to in THE LANCET of the above date. I reproduce the short notes of the case with the original drawing made before operation, which in reality gives but a faint idea of the horrible state of the limb when I operated.

FIG. 2.



On admission a sinus extended from the popliteal space to the gluteal region, in the cellular tissue of which there was a large bag of pus. The boy had a temperature of 101° and a rapid pulse. He was extremely emaciated, having suffered with his limb for nine months. Abscesses had been opened outside. The mischief began by a twist of the joint (a history rather of Hey's luxation). He had been on a trapeze, had a fall, gave his knee a twist, fell fainting to the ground, when a bystander by forcibly extending and pulling on the leg set him so far right that he was enabled to get on to the trapeze again. From this time there was a long history of inflammation and abscess. But the bone appeared to have escaped, the chief mischief being in the soft textures about the joint. Finding that pus was concealed here and there I determined to open up all the sinuses, and thoroughly antisepticise the wounds, at the same time to divide the hamstring tendons, and endeavour to get the limb into a better position. I operated on the second day after his admission to hospital. I found that pus had gravitated here and there in pockets and false canals in the celiular tissue from below the popliteal space to the gluteal region. A large number of sponges could be packed into the cavity in the thigh. The external popliteal nerve lay open for over three inches of its course; the popliteal vessels were quite exposed. Subcutaneously at the inner side I divided the semi-membranosus, and at the outside cut the biceps, but it was impossible to bring the limb more than moderately down without

FIG. 3.

danger to the nerves and vessels. All was thoroughly antisepticised; the dead tags of skin were cut away, the cavity well cleansed, the whole being conducted under the steam spray. A carbolised sponge was stuffed into the cavity in the side of the joint.

FIG. 4.

NOTES.

I exhibited this lad not long since at the branch meeting of the British Medical Association, with the other case I have described. He has perfect use of the limb; he has returned to his original employment, there is no lameness, his general health has completely recovered, and he can walk long distances without fatigue. The photograph was

taken to show the leg with the power of motion in the joint, and the cicatrices remaining after the old operation. His subsequent treatment after operation involved great care in management, opening of fresh sinuses that formed in different places in the thigh and popliteal region, cautious extension of the leg, constitutional treatment, and gradual use of the limb; however, in May, 1880, he was able to stand and walk on the leg, and is now, I am happy to say, quite restored.

FRACTURES OF THE SKULL; TREPHINING.

I have had some severe cases of fractures of the skull, three of which are worth recording. I shall briefly epitomise their histories.

CASE 1.—M. L——, aged twenty-seven, admitted to the County Hospital in April, 1880. In an election riot he had sustained severe injuries of the head—viz., a lacerated wound of the forehead over the inner angle of the left orbit, with fracture of the frontal bone, the outer table being driven in for the extent of one inch, and on examination a small opening in the inner table large enough to move the probe about in was discovered. The nasal bone of the same side was broken, there was a large transverse wound of the scalp exposing the bone over the vertex, a few other smaller wounds of scalp, and an extensive incised wound of the side of the face and nose. The scalp and face wounds were dressed, the fracture cleared of all débris, washed out with carbolic solution and dressed with lint and compound tincture of benzoin. The temperature on the day after admission was 100·6° F., and rose that evening to 102°. The third day the patient, who was insensible on admission, as much from alcohol as from the injuries, and remained stupid, but conscious the following day, became quite sensible; all the wounds were healthy-looking; he complained of considerable frontal pain, but otherwise was progressing well. From this time he appeared to do well; his temperature and pulse remained normal, morning and evening; the fractured wound was daily washed out, at times twice; the edges put on a healthy appearance, and it began to contract. The frontal pain disappeared. About a week after admission I learned, on going to the hospital, that he had some sort of "slight fit" in the night; the night nurse was out of the room at the time, and he had aroused the patient in the adjoining bed, who found him "talking queerly," but before the nurse or resident could be summoned he had quite recovered. I suspected an epileptiform seizure, and directed him to be closely watched. He had two other of these seizures at night; they were so brief in duration that the resident pupil had not time to get to his bed before he had recovered from them. In one he had evidently, from the night nurse's description, a slight convulsive attack, and could not speak for a minute or so. These attacks alarmed me, and I determined if they recurred and became more severe to open up the frontal wound and trephine for depressed bone. They ceased; he became much better; his tongue was quite healthy; his circulation and temperature were normal; he craved for food; was anxious to get out of bed; and began to speak of wishing to leave the hospital. On the ninth day after admission he complained suddenly of great pain in the right shoulder-joint, and difficulty in moving it. This stiffness and pain (without swelling) lasted for a few days and then disappeared. All the other wounds had now healed perfectly, and he was taking some solid food. On the 22nd of April, without my knowledge, he was allowed by his nurse to dress and sit up in the ward. He talked to the other patients of his injuries, and the way in which he received them, and had a perfect recollection of names and circumstances connected with the election riot.

On my visit the next day (Friday, April 23rd) I found nothing wrong; and he then wished to know if he might go to chapel on the following Sunday. After my departure, however, he did not feel well, and towards the evening he had an attack of vomiting, which was repeated, and he vomited several times during the night. On my visit on Saturday he was again better; there was no rise in temperature, but the tongue was loaded, and the pulse was rapid. The frontal wound had healed, and looked quite healthy. The vomiting ceased early on Saturday, but in the evening he again complained of severe frontal pain. At 4 o'clock A.M. Sunday, the nurse found him sitting up in his bed with a vacant look, "rolling his eyes wildly." Immediately after he fell out of the bed in a convulsion, falling on his right side. The house-surgeon (Dr. Ashley Cummins) immediately came and found him in convulsions of the entire body, but a strange tendency to roll from right to left continued all through. The pupils were equal in size, and responded alike to light. Dr. Cummins remained with him. The convulsive attacks continued on and off until 9 A.M., when there was divergent strabismus of the left eye. My colleague, Dr. Curtis, saw him at 10 A.M. Being absent from home I did not reach the hospital until half past twelve o'clock. I then found him insensible; the same rolling movement. The convulsions had ceased, there was slight stertor with marked deviation of the left eye; the pupils were unequal, and did not respond to light. I determined to trephine immediately over the frontal bone. I did so, fixing the trephine over the adjacent sound bone, completing the operation with a Key's saw and elevator. Some little pus escaped in removing the first piece. I found the inner table extensively shattered, and several small pieces were easily removed, lying almost loose. After the last piece was removed the stertor and the strabismus ceased, and the pupils acted equally. After removal to bed the rolling and restlessness recommenced, the pulse became very rapid and feeble, but it was now observed that the rolling of the body occurred in the opposite direction to that which it took before operation—viz., from right to left. This state of things continued until 6.30 P.M., when he died. The temperature had risen to 106·8° at 6 P.M.; the pulse being 160. It was with great difficulty we could obtain an autopsy, and the examination, such as it was, had to be hurriedly conducted.

There was some slight laceration of the membranes in the track of the elevated pieces of bone; otherwise the surface of the brain presented no unusual appearance. In the sulci of the convolutions, in the subarachnoid space, and in the longitudinal sinus, there was a quantity of pus, also in the subarachnoid spaces at the base of the brain, and on raising the cerebellum a large collection of pus was found between it and the posterior lobes. Altogether about two ounces of pus must have accumulated. The brain, which I had placed in solution for further examination, was unfortunately destroyed during my absence from home. That such an amount of pus should accumulate without producing any marked symptoms until within forty-eight hours before death, was the strange feature in the case. It adds another to the many recorded instances of grave brain lesion and purulent collection under the membranes without the production of alarming symptoms.

CASE 2.—The patient, a sailor aged nineteen, was admitted at 4 P.M. to the County Hospital, on June 28th, having fallen on his head, directly on the vertex, from the mast of a vessel, a distance of some twenty feet. He was taken up insensible; convulsions speedily followed, and he was brought in these to the hospital. On admission his pulse was slow and feeble, there was stertorous respiration, the entire right side was paralysed, and the left working in convulsions. There was considerable effusion into the cellular tissue of the eyelids, and evidently hæmorrhage had occurred in the orbit and nostril of the left side, considerable ecchymosis quickly appearing in these parts. A short incised wound ran directly perpendicular to the orbit, but with the probe no fracture could be detected. He was in this state when I saw him. It was impossible to say in what direction of the skull the fracture ran. But, considering the complete paralysis of the right side, and the evident implication of the left side of the skull, I determined to trephine him over the middle meningeal artery of the left side. Accordingly I did so. I found some hæmorrhage going on between the dura mater and the bone, and removed a pretty considerable sized clot; the hæmorrhage ceased after a few minutes, and there appeared to be a manifest improvement in the symptoms after the operation. All the symptoms, however, soon returned, and continued up to the time of death, which took place six hours after admission. He vomited shortly before death, and violent bleeding set in from the left ear. At the autopsy the brain was found engorged; there was bleeding from the longitudinal sinus, which was torn; the skull was fractured—viz., from the squamous portion of the temporal to the wing of the sphenoid, the coronal suture being forced open for half its extent, and a long fracture, running downwards and backwards as far as the posterior inferior angle of the parietal bone of the opposite side, where there was a depression; also a fracture of the frontal bone, extending from the junction of the orbital plate with the os planum of the ethmoid to the frontal

eminence, and then branching off at right angles to run parallel with the margin of the orbit.

CASE 3.—J. C——, aged fifty-five years, in driving his car (in the dark) over a bridge, missed his footing and fell over the side of the roadway into the river, alighting on the strand on his head. He was brought into the hospital about 5 P.M. on November 8th, 1880; he was quite sensible. There was an ugly ragged wound about two inches in length over the left orbit, the bone was driven in, the roof of the orbit being fractured, and severe hæmorrhage occurring from the wound. On examining the wound I found what I thought was a large piece of depressed bone deeply, and several other portions lying loose about. On removing these, with a little difficulty I abstracted a large piece of white delf, following it came several smaller pieces; about a week subsequent to the injury another portion about the size of a pea was washed out in syringing the wound. The case was treated by careful antiseptic syringing, daily repeated, and with ordinary dressings. He had not from first to last a bad symptom.

ON HOSPITALS:

THEIR MANAGEMENT, CONSTRUCTION, AND ARRANGEMENTS IN RELATION TO THE SUCCESSFUL TREATMENT OF DISEASE, WITH REMARKS ON THE ORGANISATION OF MEDICAL RELIEF IN THE METROPOLIS.

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HOSPITAL OF ST. ELOI AT MONTPELLIER, FRANCE.

THIS hospital, now about to be commenced, was described in the "Annales d'Hygiène" by M. Emile Bertin, Professor of Hygiene, in 1879. After considerable discussion as to the incurable defects for the treatment of the sick, of the old hospital attached to the celebrated Medical School of Montpellier, it was determined to erect a new hospital a short way out of the town, but easily accessible from it; and the plan ultimately adopted was that of M. Tollet, upon a system which contains many features of originality, and is based mainly upon the conclusions arrived at by the most advanced authorities on the subject.

M. Tollet's system may be briefly described to be based on the subdivision of the sick into small and manageable numbers, lodged in single-storied buildings, distributed over a sufficient area to prevent undue pressure upon space, and yet so connected as to be facile of access and administration. His wards are built upon the plan of the gothic arch, to avoid all stagnation of air, or arrest of organic and other matters floating in it, by angles or corners of any kind; to be easy of heating and ventilation in winter and summer, without the adoption of expensive mechanical contrivances; to admit of the provision of ample superficial and cubical space for each patient; to be constructed of materials capable of the most perfect cleansing, and to be as nearly as possible fire-proof; to be provided with verandahs, to which the beds can be transferred, with little or no disturbance of the sick, in fine weather; and to have the accessories of baths, waterclosets, and dependencies of all kinds so completely cut off as to be unable at any time to impair the purity of the atmosphere of the sick-room.

Provision is made in his distribution of the buildings for a careful classification of the sick and injured, and for the isolation of all infectious diseases, so that every kind and class of sickness may be effectually treated in the same enclosure, without any risk of undesirable complications, or injury either to the sick themselves or to the inhabitants in the vicinity of the hospital.

The hospital of St. Eloi is to contain 600 beds, which may be extended to 760 in the same enceinte. It has been approved by a special commission of the professors of the Faculties of Medicine and Science, and by the Municipal Council and Hospital Commission of Montpellier, by the General Council of Civil Buildings at the Ministry of Public Works, and by the central authorities of the "Assistance Publique," in Paris. By a decree of March, 1881, it was declared to be a work of public usefulness, in exchange for the existing hospital, which is well calculated for other purposes connected with the university. The site was very carefully selected, and the buildings have been arranged in the aspect best fitted to secure the maximum of air and light. This hospital is estimated to cost £100 a bed, and if extended to a large number would cost less. M. Tollet considers that for a hospital of 300 beds the cost would be about £108 each, and that in one of 600, with the suppression of the galleries of communication, which are not used at Friedrickshain, the cost would be a little less than £80 a bed. On this plan M. Tollet has already built large artillery barracks and a military hospital at Bourges, of which the Dean of the Faculty of Montpellier reported in November, 1880, "The hospital at Bourges, which I have just examined in all its details, consists of twelve pavilions, and the [necessary] administrative buildings, and is on the Tollet system. This system rounds off all re-entering angles, and suppresses all salient projections. It permits of the isolating of groups of diseases; it neutralises and attenuates the effects of the radiation of infection; it provides spare rooms, and a superabundance of aeration, eminently wholesome. The admirable statistical results of this hospital need not, therefore, excite surprise. The official reports record the signal services rendered by the separate pavilions in a serious outbreak of typhoid fever in the camp of Avron and the garrison of Bruges. Thanks to the isolation of the typhoid cases, and the hygienic measures carried out, the mortality was minimised, and none of the sick suffering from other diseases, and none of the nurses and attendants, were attacked."

The consecutive successful results of surgical operations were equally constant, and important proofs of the healthiness of the system of construction. The military report states that: "So far we attribute our exceptional success to hygienic conditions. We operate in conditions which may be called antiseptic. The air of the sick rooms is as pure as the external atmosphere. We must add a remarkable fact gathered from the admission registers of the hospital, that not one of the four thousand soldiers quartered in the barracks built on the Tollet system was attacked by the prevailing disease, and that all the typhoid and contagious cases came from the other barracks."

The ground on which the St. Eloi Hospital for 600 sick is to stand consists of nearly twenty-one acres, which could be increased proportionately, should the number of beds be added to. The hospital is divided primarily into three distinct and independent portions, each having an entrance from without. The first consists of the main body of the hospital and its establishments, and occupies the central rectangle of the general enclosure. The second is the contagious disease department, which is placed in the salient angle of the north side; is surrounded by a belt of tall, tufted trees, and so arranged that the prevailing winds blow across it so as to carry all exhalations and emanations away from the main buildings. The third is the Maternity Department, and is divided into two departments, well separated from the rest of the buildings. That for parturition is placed in the southern angle of the great quadrilateral, and is protected by a belt of large trees, planted at the base of the general hospital, which also shelters it from the cold winds. The infirmary of this department is far away from it, and from all other buildings, on the north-east boundary of the main enclosure, as seen in the accompanying general perspective plan. Each of the three compartments is self-contained, and has its own establishments.

The chief entrance is at the south-west end, and in front of it are regularly arranged in its centre, and on two sides of a large square court, the administrative buildings and the hospital wards. The former provide amply for all the establishment, stores, and accessories necessary in so large an institution, including a chapel, stables, drying grounds, &c. On either side are the eighteen pavilions of the common hospital, divided into two distinct branches. So long as the enclosure provides for 600 patients, the superficial area for each is about 140 square metres.[1] At Menilmontant it is 92,

[1] Each square metre is 10·76 feet.

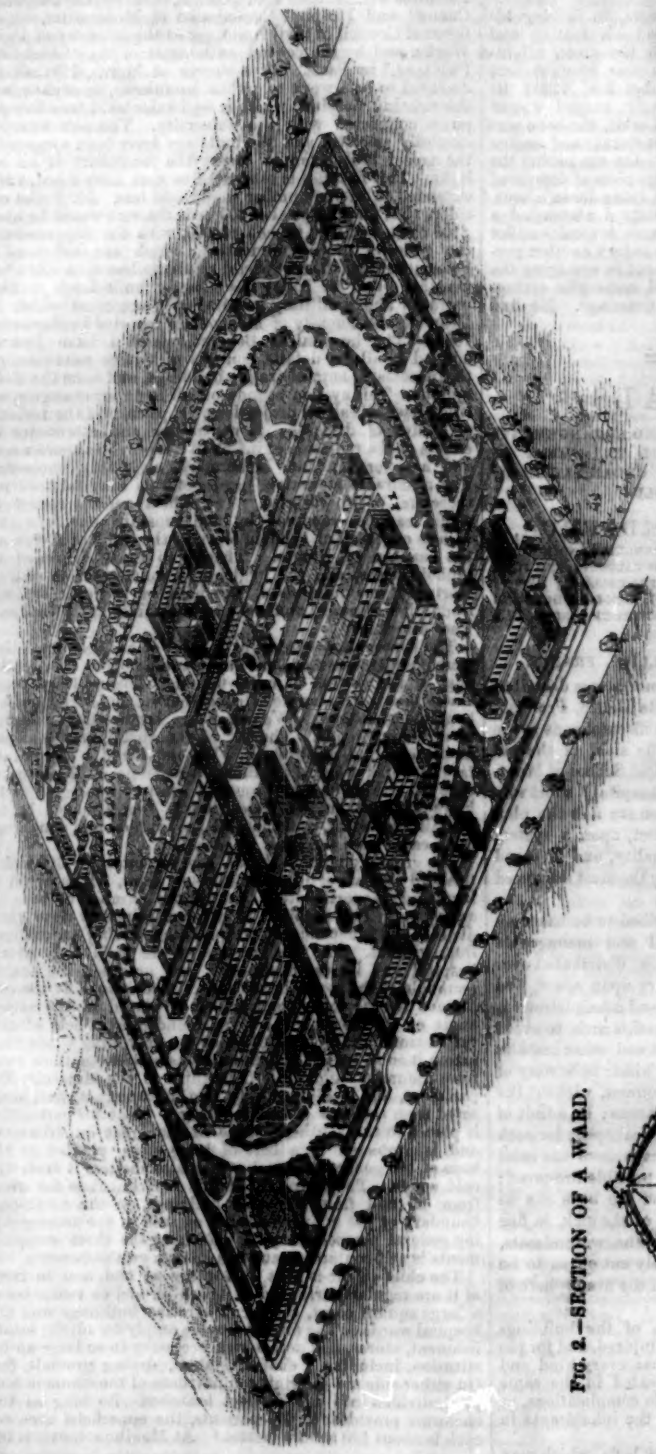


FIG. 1.—PERSPECTIVE VIEW OF THE HOSPITAL OF ST. ELOI AT MONTPELLIER.

and at the Friedrickshain in Berlin 133. Some of the administrative buildings are two-storied. The sick wards are all single-storied, 8·00 metres,[2] or 26 feet, broad, 7·50 metres, or 22 feet 9 inches, high to the crown of the arch. Each has a verandah 9 feet 10 inches broad, with a sloping roof. (Fig. 2.) All the buildings of the main hospital are connected with the pavilions by great open galleries, tramways, and telephonic communication. The contagious and maternity branches are absolutely separated. The dissecting department is as far removed as possible, in the direction of the fever quarter, and about 230 feet distant from the nearest sick ward; it is concealed by a belt of trees. The laundry and drying-grounds are at an equal distance from the nearest ward. At the upper end of the central enclosure is a reservoir containing nearly 40,000 gallons of water, derived from the town supply, which will be distributed by gravitation throughout the building. This reservoir will be vaulted, surrounded by trees, and arranged as an ice house for the preservation of the ice naturally formed in winter. The supply is calculated at about twelve gallons a head daily, and proper provision is made to distribute water for drinking, cleansing, and watering the grounds and gardens, and to carry off refuse or waste water. The buildings will be lighted with gas throughout.

Each separate pavilion is 170 ft. long, and 26 ft. 3 in. broad within the walls. It consists of a long room, with an annexe at each end, one containing a couple of beds for isolation, a dining-room, and lavatory; the other, quarters for the attendants, medicine-room, linen-store, bath, water-closet, and dirty linen shoot. In the long room are twenty-eight beds, with fourteen windows. It is 100 ft. long, 26 ft. 3 in. broad, and 24 ft. high. Each patient has 98 square ft. of superficial space, and nearly 2000 cubic ft. of air space. The beds are arranged in two rows, with an interval of 4 ft. between each,

[2] Each superficial metre is 39 inches, or 3 ft. 3 in.

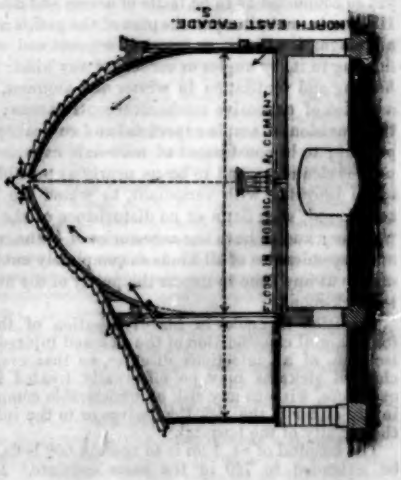


FIG. 2.—SECTION OF A WARD.

and about 11 ft. 6 in. in the central passage. Each bed is placed a little more than a foot from the outer wall, and there are two in each pier. The ground-floor (Fig. 2), about 7 ft. in height, is left free from all encumbrances, to facilitate the prompt and cleanly removal of all refuse matter, the soiled linen, watercloset tubs, &c. In winter they serve to send up warm air to the wards from the heating apparatus placed in them, and in summer cool the air by appropriate arrangements. The natural lighting of the wards is by seven windows on the posterior façade, and seven glazed doors opening on to the verandah. This gives for illumination a little more than 6 ft. 6 in. of glass to each bed, which is considered sufficient in the bright warm climate of the south of France.

As the form of construction described is entirely new, and as many eminent authorities consider the occurrence of pyæmia, erysipelas, and similar hospital opprobria to be mainly, if not entirely, a matter of ventilation, I will reproduce in M. Tollet's own words, the principles applied by him to the aeration and warming of his sick wards:—"In proportion to the facility of ventilating simple constructions provided with apertures on all their enveloping surfaces, is the difficulty of renewing the air of many-chambered and storied buildings. In the latter very complicated and costly mechanical contrivances must be resorted to, which rarely produce the effects expected; whereas in the former, simple natural ventilation can be practised at all seasons, and in all states of external temperature. Natural ventilation, as I understand it, is the movement of air which occurs in an enclosed space at all times, without the aid of any mechanical contrivance. We distinguish between summer or ascending ventilation, resulting from the natural movement from the ground towards the highest point of a building, of air warmed by contact with the occupants, and winter, or the reversed ventilation—that which is caused by heating. The amount of fresh air renewed by natural ventilation is infinitely greater than that which can be obtained by the most costly mechanical contrivances. Thus in a room of the capacity of 1500 cubic metres, nearly 53,000 cubic feet, the air can be renewed by the opening of a single window in less than half an hour, with a velocity equal to 0·50m., or nearly two feet, in every second. Winter ventilation is intimately connected with warming. If, as a measure of economy, open chimneys are not used, an apparatus should be so arranged as to draw its supply at will directly from the external air by means of tubular connexions, or indirectly by exhausting the air of the room. We should be able also to reverse the ventilation, and withdraw the vitiated air under each bed, and drive it out by the smoke tubes, as practised in the surgical wards of the Military Hospital at Bruges. I only insist on this point, that the heating apparatus shall present warming surfaces sufficient to render it unnecessary to superheat the air emitted by them, to obtain a mean temperature of 60° F. They can also be so arranged, as to connect them at will with ventilating chimneys. It was supposed *a priori* that the large wards of the Bruges Hospital, with a capacity of 53,000 cubic feet, would be difficult to heat at all in winter, and would need a large expenditure of fuel. Two experiments made at an interval of a year, one at the temperature of 32° F., and the other at 28·4° F., proved that a cube of air of 2118 feet per bed, renewed two or three times every hour in winter, could be easily and cheaply heated to 60°. I also wished to take into account the movement of air in a pointed arch vessel, and I ascertained it to be very regular and constant, only at each experiment there was the difference of a degree of heat between the surface of the soil and that of the highest point, which is very natural. The difference at the height of a man was not half a degree."

By the arrangement of the windows, the ventilating opening at the point of the arch, and the placing of stoves of sufficient size on the ground floor and in the great wards themselves, all this will be accomplished at Montpellier. In the smaller rooms open fireplaces are used. The air is renewed in winter at the rate of 14,000 cubic feet an hour for each bed. Gas is also used as a supplementary ventilator, when and where needed. Two of the eighteen pavilions are assigned to paying patients in single rooms, by means of inner partitions. The pavilions for contagious diseases are arranged on the same principles, with a few differences of detail. They are nine in number, and each has only sixteen beds. They are distributed in three sections of three pavilions each, so as to isolate them completely for different classes of contagious disease. Each group has its convalescent pavilions placed at the entrances to the fever quarters, where the convalescents can be detained until they are fit to be discharged with safety. There are two observation pavilions, one on either side of the main entrance. They have five single-bedded rooms in each, in which suspicious cases can be placed under observation on admission, until their exact nature is determined. There is likewise a special disinfection room. The maternity pavilion is cruciform, situated at the southern angle of the great enclosure, surrounded by trees, and at a minimum distance of 147 ft. 7 in. from the nearest building of the general hospital. This department is self-contained. The lying-in room and the dwellings of the superintendents are in the centre, which is connected by open galleries with the two long wings, in one of which the pregnant women awaiting confinement are placed, and in the other those who have been delivered. The two are thus entirely separated. There are twelve beds in each compartment, containing a common room of eight beds in each, and two rooms on either side having two beds in each. All the beds are in a single row. The buildings are one-storied. In the event of puerperal fever appearing, a special infirmary for the reception of the cases has been provided at the greatest possible distance, on the same side, so as to render its spread by contagion impossible. All the open spaces are occupied by gardens and trees, among which it is intended to endeavour to acclimatise the Eucalyptus. The pavilions are eighty-six feet apart, which, with reference to their height, is sufficient to allow of their perfect lighting and aeration. As the mechanical labour of mounting stairs is estimated to be ten times that of traversing a plane surface of the same extent, the physical fatigue of supervising buildings on this plan is diminished in the like degree.

I have been thus particular in giving an outline of the proposed application on an extensive scale, at Montpellier, of M. Tollet's system, because it appears to me to fulfil all the conditions of salubrity required in hospitals, more completely than any other form of permanent structure that I am acquainted with, and because a general hospital on this plan, satisfying all the exigencies of disease and accident in the same locality, I hold to be the right means of providing for the medical relief of any community in whose vicinity it is placed. So far as it has been tried in barracks, it has been eminently successful, and also in the military hospital at Bruges. From August, 1879, to June, 1880, in the first months of its existence, all the surgical operations and cases of traumatic injury admitted—several of them very severe—were successful, there having been only a single death from cardiac embolism, eleven months after the accident, in an artilleryman, whose leg was fractured by the bursting of a shell. The hospital is new, and all new structures are free from the majority of the bad effects of old buildings. The numbers, likewise, are too small for any sound deduction, yet the result is encouraging.

(To be continued.)

A NEW LINE OF RESEARCH BEARING ON THE PHYSIOLOGY OF SUGAR IN THE ANIMAL SYSTEM.

BY F. W. PAVY, M.D., F.R.S.

(Concluded from p. 7.)

WHEN the alcoholic extraction has been thoroughly effected the coagulated residue of blood fails, as I have stated, to yield to water anything possessing *per se* a cupric oxide reducing property. After treatment, however, with sulphuric acid and heat the aqueous extract is found to exert a certain amount of cupric oxide reducing action. The substance removed by water which possesses this property is part of the material present in the coagulated residue, which closely resembles, if it does not actually constitute, Bernardin (glycogen). There appears to be uncertainty in the amount extracted by water, and I think it may be considered that no useful information is derivable from the examination of the aqueous extract. Just for the purpose, however, of giving a representation of what I have found, I may state that taking the several observations of which I have a record (thirty-two in number), the amount of material contained in the aqueous extract convertible into cupric oxide reducing substance by

sulphuric acid and heat stands at about 0·290 per 1000 expressed as glucose.

It did not occur to me at starting to do anything in the way of examining the residue left after alcoholic and aqueous extraction, not imagining that there would be anything of concern to me present. In the course of investigation, however, grounds presented themselves for leading me to deal with the residue, and I determined to treat it as I have been in the habit of treating the liver in making a quantitative determination of Bernardin (glycogen).

This process consists of dissolving by means of an alkali, pouring into spirit, and collecting the precipitate. Bernardin (glycogen) possesses two properties which greatly facilitate its separation from other bodies—namely, resistance to the action of an alkali and insolubility in alcohol. Albuminoid matters are attacked by caustic alkalies, and are then not precipitable by spirit as before. A method of separation is thus supplied. The object of applying the process was to ascertain whether there existed concealed in the residue anything of the nature of Bernardin (glycogen).

The residue was treated with water, and caustic potash added in the proportion of about one-fifth of the original weight of blood taken for examination. Heat was applied until solution occurred, and the product was poured into about five or six times its volume of spirit. The precipitate was allowed till the following day to settle, and the spirit was then carefully decanted off and some fresh spirit added and time again given to settle. The next step was to purify the product, and this was done by collecting and dissolving it in a little water, thoroughly acidifying the solution with acetic acid, filtering from the precipitate produced, and then reprecipitating with spirit. The precipitate thus finally obtained was dissolved in water and examined. The solution was found to exert no reducing action upon the ammoniated cupric test before treatment with sulphuric acid and heat, but did so afterwards. Such is the behaviour of Bernardin (glycogen), and such behaviour it is to be noted was obtained from a product furnished by the process of preparation adapted for yielding in a separated form whatever of the principle in question the blood might contain.

I have spoken of the material I have been referring to, which is precipitable by spirit and convertible into glucose by sulphuric acid and heat, under the name of Bernardin, but I am not prepared to state that the principle which exists in the blood is absolutely identical with that belonging to the liver. The determination of this point must form the subject of future investigation.

The process I have described is the one by which I learnt that a principle agreeing with Bernardin (glycogen) may be recognised in the blood. A shorter method, however, may be had recourse to for revealing its presence. The blood may be at once treated with potash, and the product poured into spirit. The subsequent steps to be followed are those which have been already described.

It is through the ammoniated cupric test that I have been led on to the acquirement of the information that I have obtained. The delicacy of the test, and the circumstance that its action is not interfered with by the presence of a small quantity of nitrogenous matter, have enabled me to discern conditions which the ordinary application of the cupro-potassic test would have failed to have revealed. Once in possession of the knowledge supplied through the ammoniated cupric test I could see that the ordinary 'cupro-potassic test ought to be susceptible of being rendered applicable for revealing the glucose produced from the Bernardin (glycogen) existing in blood, and such, I find, proves to be the case. From half a litre to a litre of blood should be taken and treated by being at once boiled with potash and poured into spirit. The aqueous solution of the ultimate alcoholic precipitate obtained possesses, as will be understood, not the slightest cupric oxide reducing power of its own; but, after treatment with sulphuric acid and heat, and subsequent neutralisation, gives a good reaction with the cupro-potassic solution used in the ordinary way. The suitability of blood for operating upon to show this result varies, and a specimen should be procured from an animal in good condition and well fed up to the time of death. The blood obtained from the slaughter-house is not always a favourable specimen for the purpose, and this is scarcely to be wondered at, looking at the abnormal state the animals often exist under for a day or two previous to being killed. Similarly, it is found that for collecting Bernardin (glycogen) from the liver, the slaughter-house often affords a very unfavourable specimen for the purpose.

I will furnish the results of the quantitative analyses I have performed. They were simply taken just as the specimens happened to present themselves. As yet I have not done anything towards ascertaining in a systematic way how the quantity of the principle is modified by antecedent conditions. This will form a subject for subsequent investigation. The glucose figures yielded by the analysis have been brought into Bernardin (glycogen) figures by the method of calculation which will be later on referred to.

Amount of Bernardin (glycogen) found per 1000 of Blood.

Sheep.		Bullock.	Cat.	Rabbit.	Horse.
0·621	0·388	0·540	0·837	0·858	0·504
0·422	1·025	0·522	0·423	—	—
0·540	0·605	—	0·387	—	—
0·630	0·709	—	0·441	—	—
0·549	0·594	—	0·630	—	—
0·432	0·687	—	0·967	—	—
0·623	1·483	—	0·693	—	—
0·423	0·261	—	—	—	—
0·797	0·283	—	—	—	—

The mean of these twenty-nine results, taken altogether, gives 0·616 as the amount of Bernardin found per 1000 of blood.

It has been seen that the method I adopt for the quantitative determination of the Bernardin present in the blood is by converting it into glucose by the agency of sulphuric acid and heat, and then estimating the glucose by means of the ammoniated cupric test. This is the plan adopted for the quantitative determination of starch. I have experimented to ascertain the conditions required for securing complete conversion into glucose, and have found that Bernardin offers a far greater resistance to the converting action of sulphuric acid and heat than I had at first anticipated. The particulars of an observation are before me which showed that after the process of boiling had been carried on for four hours full conversion had taken place, whilst at the end of three hours conversion was considerably short of complete.

Fortunately for the progress of investigation, it happens that by exposure to a higher temperature under pressure, a comparatively short time suffices for effecting the complete conversion of Bernardin into sugar. If the necessity existed for having recourse to such a prolonged operation as boiling for four hours a serious obstacle would be offered to the performance of the quantitative determination to which we have to look for the supply of information. To shorten the time of exposure, I at first employed a stout glass flask with a vulcanised rubber bung wired into its mouth, and immersed this in an oil-bath heated to a considerably higher temperature than that of boiling water. Finding that I could not make sufficiently rapid progress with my investigations by proceeding in this way, I had a stout copper boiler constructed for the application of heat under pressure. It is provided with a lid which is screwed down with iron bolts, and has a lever safety-valve with a shifting weight to regulate the pressure. The boiler is large enough to receive a number of flasks, so that several products can be operated on at a time. I am in the habit of working it at 45 lbs. pressure, which gives a temperature just under 300° F. At this temperature the conversion into glucose is accomplished within about a quarter of an hour. It is reliably secured by exposure for half an hour, and this time I am in the habit of allowing.

The quantity of sulphuric acid used is in the proportion of about 4 per cent. of the strong acid to the volume of liquid that is being worked upon. It is essential to give attention that the conditions are not such that the acid is appropriated to the liberation of another acid unendowed with the power of exerting a converting influence: such, for instance, as would occur if acetic acid had been previously used so as to leave a considerable quantity of acetates present.

From the amount of glucose, which, through the ammoniated cupric test has been ascertained to be produced, the quantity of Bernardin (glycogen) is calculated. The accepted formula for Bernardin is the same as for starch—viz., $C_6H_{10}O_5$. The formula for glucose is $C_6H_{12}O_6$. The equivalent of the one is 162 and of the other 180. From these

we obtain the factor for the conversion of glucose figures into Bernardin figures :—

Let x = the amount of Bernardin equivalent to one part of glucose.

Then, as $$180 : 162 :: 1 : x,$$

or $$x = \frac{162}{180} = \frac{9}{10} = 9.$$

Hence ·9 stands as the factor to multiply by to convert glucose figures into Bernardin figures.

I have shown that after the extraction of glucose from blood by alcohol there is to be found a material which gives no cupric oxide reducing action before treatment with sulphuric acid and heat, but does so afterwards. Water dissolves out a certain portion of this material, but the larger portion remains incorporated with the solid residue, and is susceptible of being brought into view by the agency of boiling with potash and subsequent precipitation with spirit.

Bernardin (glycogen) added to blood behaves in a similar way. It is carried down in great part by the precipitated matter when coagulation is induced, and afterwards so tenaciously held that only the minor portion is removed by washing with water. The proportion dissolved out by water has varied considerably in different instances, and I have been led to question whether, in some cases, it may not be held to a more fixed extent than in others. I was at first much puzzled to know what had become of the substance, and it seemed, until I recognised it in the coagulated residue, that contact with blood led to an immediate extensive disappearance. To recover it the coagulated matter requires to be subjected to disintegration by boiling with a caustic alkali. In some experiments a notable amount of Bernardin has still remained unaccounted for, but in some others it has been nearly all recovered. For instance, in two recent experiments, after half an hour's exposure to a temperature of from 100° to 110° F., the following results were obtained: Bernardin equivalent to 0·112 grm. of glucose was in each case added, and Bernardin equivalent to 0·105 grm. of glucose in each case recovered. In another experiment Bernardin equivalent to 0·294 grm. of glucose was added and Bernardin equivalent to 0·269 grm. of glucose recovered. I consider that further observations upon this subject require to be undertaken.

It is known that precipitates have a tendency to carry down other substances with them, and to this principle, it may be suggested, accounts for what has been adverted to above. I am inclined to think, however, from a review of all the evidence before me, that there is something more than this at the foundation of what occurs. The question may be raised whether there is not some feeble combination existing, and whether this may not have a bearing of considerable physiological importance. Subjoined are results touching the point under consideration.

A weighed quantity of liver from a recently killed dog was reduced to a pulp and thoroughly extracted with alcohol for the removal of glucose. The coagulated residue from the alcoholic washing was then extracted with repeated washings of boiling water till the washings came away clear instead of lactescent as at first. The washings were collected and the Bernardin (glycogen) estimated by conversion into glucose, and calculation from the glucose found. After being thus washed the liver residue was kept in a moist condition till the following day, when the process of washing and estimation of the extracted Bernardin was again performed. The process was subsequently repeated in a similar way; and, finally, the liver residue which had been subjected to the several daily washings was boiled with potash, and the liquefied product poured into spirit and the Bernardin collected and estimated. The following are the figures yielded :—

	Per 1000 of liver.
Bernardin extracted the 1st day	13·833
,, ,, 2nd ,, ...	3·879
,, ,, 3rd ,, ...	2·961
,, ,, 4th ,, ...	2·817
Bernardin remaining in the liver residue ...	35·145

In another similarly conducted experiment upon the liver of a cat the following results were obtained :—

	Per 1000 of liver.
Bernardin extracted the 1st day	3·951
,, ,, 2nd ,, ...	1·134
,, ,, 3rd ,, ...	Trace
Bernardin remaining in the liver residue ...	3·609

The above liver, it will be seen, was poor in Bernardin, and this is often noticed in the cat unless the animal has been fed with milk or bread in addition to, or in lieu of, meat.

In a third experiment upon the liver of a rabbit the following figures were furnished :—

	Per 1000 of liver.
Bernardin extracted the 1st day	13·503
,, ,, 2nd ,, ...	3·376
,, ,, 4th ,, ...	3·688
,, ,, 8th ,, ...	2·466
,, ,, 12th ,, ...	2·299
Bernardin remaining in the liver residue ...	73·167

These results show how imperfectly ordinary extraction with water removes Bernardin from the liver substance, and account for the small quantities which, perhaps, may have been noticed to have been obtained when aqueous extraction has been had recourse to for collecting it.

Before the above quantitative experiments were performed, I noticed the following circumstance, which, indeed, led me to undertake them. Some bruised liver substance was washed in a beaker with boiling water, till the water failed to present the slightest appearance of lactescence. The last washing was poured off, and the liver substance simply left in a moist condition in the beaker till the following day. On then boiling it up with water a highly lactescent liquid (from the extraction of Bernardin) was again obtained. A few repetitions of the washing resulted, as on the previous day, in a clear liquid being yielded, and the residue placed aside as before in a moist state gave rise on the following day to a recurrence of the phenomena. In some way or other the Bernardin is held in the tissue, and with the lapse of time is set free for being taken up by water.

Although what I have described is noticeable when the liver substance is extracted with water at 212° F., yet a very different result is attainable by extraction under pressure, at a temperature of 300° F. At this temperature, it is found that all the Bernardin is speedily extracted. The copper boiler or digester, which I employ for the conversion of Bernardin into glucose by sulphuric acid, has been made use of for the extraction of liver experiments at 300° F., and half an hour, as the following statement of results obtained shows, has sufficed for the full accomplishment of extraction.

Two weighed portions of rabbit's liver which had been bruised to a pulp in a mortar were treated with spirit, and washed and pressed for the removal of glucose. The solid residue was then in the one case boiled with a solution of potash, and the Bernardin precipitated with spirit, and afterwards estimated in the usual way by conversion into glucose. In the other case the liver residue, after alcoholic extraction, was treated with water and extracted at 300° F. The aqueous extract was then boiled with a little potash, and the Bernardin precipitated with spirit and estimated by conversion into glucose. The figures yielded stood thus :—

	Bernardin per 1000 of liver.
After solution of liver substance in potash ...	91·314
After extraction at 300° F.	93·015

In a second similarly conducted experiment upon a rabbit's liver the figures obtained were :—

	Bernardin per 1000 of liver.
After solution of liver substance in potash ...	64·242
After extraction at 300° F.	68·040

In a third experiment upon a cat's liver the results were :—

	Bernardin per 1000 of liver.
After solution of liver substance in potash ...	30·735
After extraction at 300° F.	31·742

Whatever the precise explanation, it follows from the results which have been set forth that the manner in which Bernardin (glycogen) is held, or the condition under which it exists in the liver, is such that at a temperature of 300° F. it is readily and completely susceptible of removal by water, whilst the resistance offered to removal is at the same time of sufficient intensity to permit only partial extraction to occur within moderate limits of time at the ordinary boiling temperature of water.

When referring to the Bernardin (glycogen) discoverable in the blood, I stated that I was not prepared to assert that the principle existing in the blood is absolutely identical with that belonging to the liver. There is a point of difference which I have noticed in relation to the effect of extraction with water at 300° F., but whether this is due to

a difference in the properties of the principle itself, or whether to the manner in which it is held by other matter, I am not yet in a position to decide. The Bernardin of the liver, as I have shown, is readily extracted with water at 300° F., whilst, according to the experiments I have conducted, that of the blood is not similarly susceptible of removal.

I have not yet said anything about the structures of the body generally in relation to Bernardin. I have subjected the spleen, pancreas, kidney, brain, and muscle to the same kind of examination as I have adopted in the case of the blood, and have found in all a notable amount of Bernardin.

Muscle has long been known to contain Bernardin (glycogen), but the quantity I obtain by the potash process is decidedly greater than what, I believe, is generally thought to be present. From cat's muscle, in one of my observations, the analysis yielded upwards of 5 per 1000 Horse's muscle has been known to be specially characteristic as containing Bernardin, and 9 per 1000 in one instance is the quantity I have obtained.

In the observations I have yet made upon the spleen, pancreas, kidney, and brain, the largest amount of Bernardin has been found in the spleen, and in one instance the quantity indicated was a little under 4 per 1000.

Bernardin therefore has been found as a constituent of all the tissues I have up to the present examined. I have likewise obtained it in notable amount from both the white and yelk of egg.

Besides Bernardin, there is in the several tissues I have referred to a cupric oxide reducing substance, which is susceptible of extraction by alcohol, and this also is present to a somewhat notable extent. In the case of the spleen, pancreas, kidney, and brain, this body appears to be glucose, the reducing power in most of the instances having come out about the same before and after the treatment with sulphuric acid and heat. In the case of muscle, however, the reducing power has been usually observed to be about twice as great after the treatment with sulphuric acid and heat as before. It seems, therefore, that we have here a body of the nature of maltose, instead of glucose, to deal with.

Although I have a considerable number of observations before me, yet I consider it advisable at present only to speak in the general way that I have done upon this subject. Observations conducted under varied physiological conditions require to be undertaken, so that besides having the facts as mere chemical facts before us, we may be in a position also to deal with them from a physiological point of view. In a subsequent communication I will enter further into this matter, and then supply details of the actual quantitative results.

Summary of Conclusions.

Bernardin (glycogen) does not undergo any significant transformation into sugar in contact with blood.

Bernardin exists to a distinctly notable extent as a normal constituent of blood.

The evidence derivable from the observations recorded on the addition of Bernardin to blood and its subsequent recovery, and on its extraction from the liver by boiling water on successive days, and by water at 300° F., tends to show that Bernardin enters into feeble combination with nitrogenous matter.

Bernardin exists in notable amount, not only in muscle, as has been previously known, but also in the spleen, pancreas, kidney, and brain. These are all the structures I have yet examined. It also exists in notable amount in the white and yelk of egg. These several products likewise contain a cupric oxide reducing substance, which is extracted by alcohol, and which in most instances possesses the characters of glucose, but specially in the case of muscle the characters of maltose.

Through the existence of Bernardin (glycogen) throughout the system, as has been represented, we have a carbohydrate occupying a parallel position to albumen—viz., existing in the colloidal state, and thus adapted for retention within the body, instead of passing off as a diffusible substance like glucose tends to do.

Grosvenor street, W.

BEQUESTS AND DONATIONS TO MEDICAL CHARITIES. Mr. Wm. Miles, late of Exeter, bequeathed £200 to the Exeter Lying-in Charity. By the will of Mr. Geo. Marples, the Sheffield General Infirmary and the Sheffield Public Hospital and Dispensary become each entitled to £500, and the Sheffield Hospital for Women to £300.

ASYNCHRONISM OF THE TWO SIDES OF THE HEART.

BY PHILIP BINDLEY, M.B. LOND.,
LATE ASSISTANT-PHYSICIAN TO THE GENERAL HOSPITAL, BIRMINGHAM.

A DOUBLE apex beat with only a single arterial impulse is one of the numerous forms of cardiac irregularity which are observed clinically. With the stethoscope three classes of this abnormality can be recognised. One in which a natural beat is succeeded by a confusion, which amounts to scarcely more than a sensation of an attempt at contraction. A second in which the natural beat is followed by an obvious contraction, with a first sound, but no second sound. A third, where one beat, with clear first and second sounds and arterial impulse, is followed by another of similar character as regards the sounds, but without an arterial impulse. The ensuing case illustrates this last form.

C. W——, aged twenty-two, single, housemaid, well nourished, complained of general lassitude, indigestion, palpitation, and shortness of breath on slight exertion, which symptoms had been coming on for some months. She says she had rheumatic fever twelve months ago, but from the history of this illness it is clear that the attack was only a very mild one, even if it were of a rheumatic nature at all. Conjunctivæ and palate pallid, but the countenance showed little evidence of anæmia. Venous hum in right side of neck. Faint systolic murmur over apex, and at second left intercostal space, where it is rather louder. Heart's action irregular and intermittent. Rest and ten-minim doses of tincture of belladonna three times a day for three weeks afforded much relief, and she resumed her duties as housemaid.

A month later she was much worse, the palpitation and shortness of breath having returned with increased severity; but the conjunctivæ and palate were no longer anæmic, and the cardiac murmur had quite disappeared. Same treatment as before, and ordered to keep in bed for a few days. During these few days the chest was repeatedly and carefully examined. Lungs healthy; superficial area of cardiac dulness normal. The condition of the heart, as revealed by palpation and auscultation, was unusual and peculiar. Over the apex there was a double beat, the first element of which had its point of maximum intensity at the outer margin of the area of impulse, and seemed to come up to the chest-wall from a short distance within. Almost immediately the sensation of this beat had ended the second element began, and appeared to start out of and from the spot where the first was best felt, and slide on, upwards and inwards, beneath the finger, at the same time communicating a distinct stroke—in fact, more distinct than that of the first element. At a spot an inch inside the left mammary line in the fifth space it was possible, with the end of one finger, to perceive the characteristics of both beats. If the end of the finger were shifted a little outwards the first of the two strokes became more evident; if shifted a little inwards the second was more prominently felt, while the force of the first was diminished. The two beats were followed by a pause of longer duration than the time between the beginnings of the two beats. The pulsation in the carotid was synchronous with the first element; with the second there was no trace of a carotid pulse.

In the second left intercostal space, three-quarters of an inch from the edge of the sternum, and close to the upper border of the third rib, there was an obvious beat; in the third space a similar pulsation was to be felt, but less distinctly. These two pulsations were synchronous with the second apex beat. The radial pulse was 62 in the minute.

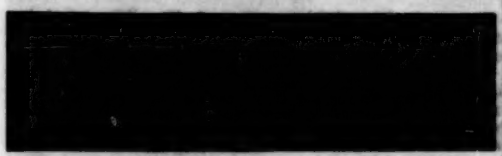
Although at first a jumble of sounds seemed to be conveyed to the ear by the stethoscope, if a finger were at the same time placed on the carotid it was not difficult to analyse the mixture, and recognise which of the sounds indicated the closure of the mitral valve. With this known factor to start from, the following sequence and rhythm were determinate, the irregularity recurring in a regular manner—

1....21'....2'.....1....21'....2'.....1... &c. &c.

The figures represent the first and second sounds respectively, and the dotted lines indicate the relative length of the intervals between the sounds. The figure 1, syn-

chronous with the carotid impulse, signifies the mitral closure; 2, the aortic; 1', the tricuspid (which followed immediately upon the aortic); 2', the pulmonary. None of the sounds were loud, but were of a perfectly pure character. There was no murmur. The relation of the sounds to the double beat was equally plain—1 corresponding to the first beat, and 1' to the second. The basic beat in the second space was synchronous with 1'. After this irregularity had continued for some little time, the heart would give a kind of tumble, and at once begin to act in a perfectly normal and regular manner; the pulse, however, instead of being only about 60, at the same moment rose to between 80 and 90. Any exertion, such as walking up and down the room for a minute or two, caused a repetition of the irregular action.

In order to obtain an unequivocal record tracings were taken with a cardiograph. By means of this the facts are made to register themselves. Three levers were supported by an arm and brought to bear upon the revolving drum; great care was taken that they worked parallel and that their points travelled in the same vertical line. One lever recorded the impulse of the carotid (*c*)—see figure[1]—another the basic



impulse (*b*), and the third the apex beat, its duplicate character being shown in the tracing; *l*, left ventricle, indicates the first element in the apex beat; *r*, right ventricle, the second element. The tracings to be read from right to left.

This graphic representation demonstrates that the carotid impulse is synchronous with the first apex beat, and that the contracting left ventricle is the cause of this beat. It proves that the basic impulse is synchronous with the second apex beat, and that this beat is not due to the left ventricle, inasmuch as there is with it no arterial impulse. But this second beat was accompanied by a first sound, and followed by a second sound; and, further, it was not merely a slight contraction, perhaps only just sufficient to lift the semilunar valves, but a sustained contraction, equal in length to that of the left ventricle, and succeeded after a corresponding interval by a second sound as distinct, although not quite so loud, as that produced in the aorta. Therefore this second sound must have been created in the pulmonary artery, and the second apex beat due to the contracting right ventricle. Palpation alone, or palpation and auscultation combined, lead to the same conclusion.

Some observers deny that the two sides of the heart can beat separately. This is not the only case where it has been observed, but it is selected because the attempt to record graphically the basic beat in conjunction with the carotid and double apex beat was successful. It is unfortunate that the hæmic murmur observed when the patient was first seen disappeared, for had it persisted during the irregularity the determination of its locality—whether pulmonary or mitral—would have been rendered manifest. The left auricle can have had nothing to do with the production of the basic impulse. This must have been caused by either the root of the pulmonary artery or the impact of the conus arteriosus against the intercostal space. The question of basic impulse and some other subjects it is proposed to discuss in a future communication.

New Bond-street, W.

[1] The tracings have been much reduced in size to suit THE LANCET column.

DEVONSHIRE HOSPITAL AND BUXTON BATH CHARITY.—At the meeting of the Committee of Management, held on July 2nd, Dr. Robertson, the chairman, was able to announce the near completion of the extension works of the hospital. It will be recollected that at this institution the system of issuing post-cards to patients on leaving the hospital, on the understanding that the cards be returned with a statement of the progress of the convalescence or other result written on them, is in vogue. The system seems to have been fairly successful. Of 249 returns thus made, 181 report improvement, 67 no amelioration, and 1 a fatal issue.

THE BEGINNING, MIDDLE, AND END OF A STONE IN THE URINARY PASSAGES; LITHOLAPAXY.

BY GEORGE E. POST, M.D.,
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A. B——, a clergyman, aged thirty eight years, of good but delicate constitution, studious habits, temperate, free from hereditary tendency to gout or lithic diathesis. Tendency to constipation strong from youth. In the spring of 1877 he had a violent attack of griping pain in the region of the right kidney and in front opposite the junction of the ascending and transverse colon. The attack was not a very long one, and was relieved by domestic remedies without the aid of a physician. A similar attack occurred during the summer of the same year, while the patient was in the mountains at a distance from Beyrout. A native physician was consulted, and prescribed turpentine stupes to the seat of pain. This attack was also less severe than subsequent ones. During the spring of 1878 there occurred several of these attacks, more severe than the preceding. The nature of the attacks was as follows. After more than usually obstinate constipation the patient was seized with agonising pain in the before-mentioned regions, accompanied by nausea and vomiting. There was marked tenderness over the kidney, but not over the angle of the colon. Hot fomentations, sinapisms, flax-seed poultices, and warm drinks gave little or no relief. Full hypodermic injections of morphia were effectual in mitigating the pain, which did not generally disappear until the following day, after the operation of a saline cathartic. During several of these attacks there was considerable febrile excitement, but never any inflammation of the kidneys. During the earlier attacks the pain was localised in the region of the kidney and upper part of the right hypochondrium, but late in the spring of 1878 the patient began to feel pain along the course of the right ureter, and to complain of retraction of the corresponding testicle, and pain in the glans penis. Periods of several months sometimes passed without any attacks. In the early part of the summer of 1878 he experienced a very severe paroxysm, but no other supervened until late in the autumn of the same year. In the meantime he had taken a trip of eleven days of rough riding over the highest peaks of Lebanon, with no unpleasant results. In the summer of 1879, after several of these attacks, I advised him to take a journey to Europe, and to use the antilithic waters of Carlsbad or Kissingen. He had several attacks during the journey to the last-named watering-place, where he spent a month, using the waters and conforming to the prescribed regimen under medical advice. The result was a cure of the constipation and a great improvement of his general health. On his return journey, however, while at Marseilles, he had a severe paroxysm of pain, unaccompanied by the former constipation of the bowels, after which he had no further attacks. The date of the last attack was near the end of September, 1879. From that time until the spring of 1880 he was in excellent health, suffering no pain, free from constitutional disturbance, and he supposed himself quite cured.

Although the symptoms up to the date of the last paroxysm had led to a strong suspicion of the passage of a kidney stone, the diagnosis was not quite clear. The attacks were in every instance but one preceded and accompanied by constipation, and only yielded fully when the constipation was overcome by a cathartic. The paroxysms were not brought on by muscular exertion or jars. On the contrary, his health improved, and he was long free from pain after a long and fatiguing journey on horseback. The urine was not lessened in quantity nor rendered turbid during these exacerbations. During the latter part of the spring of 1880, more than six months after the attack of pain in Marseilles, he began to suffer from symptoms of vesical irritation, with increasing cloudiness of the urine. These symptoms were aggravated by the slightest imprudence in diet, especially by the use of fruit and pastry. During the summer he had occasionally a sensation of a slight stoppage of the urine. I sounded the bladder, but did not detect a stone. The passage of the instrument, however, gave immediate and marked relief to all the symptoms. These recurred, however, after a few

days. I then passed my finger into the rectum, to explore the state of the prostate and base of the bladder. This manipulation also gave relief, but it was, as before, transitory. At the patient's request I continued to pass the instrument from time to time, and on each occasion with the same result of temporary relief of the symptoms, followed by a relapse after a few days.

On the 12th of March, 1881, I passed a sound and touched a body apparently fixed to the left wall of the bladder near its base. The instrument, however, did not give a click, but only a dull thud, as if it had come in contact with a vesical polypus or an encysted stone. The impact could be felt, but not heard. There was also slight tenderness on pressure over the anterior wall of the abdomen opposite to the site of the body in the bladder. A second examination, two days later, giving the same result, I advised the patient to be chloroformed, and, if a stone were clearly made out, to submit to lithotrity.

On the morning of March 17th the patient was chloroformed, and a stone seized and crushed. The consistence of the stone was that of partially set mortar. A fragment was also crushed, but no more being detected the lithotrite was withdrawn, and a Bigelow's evacuating catheter introduced, and the débris aspirated. The lithotrite was again introduced, but no more fragments could be felt, and the patient was allowed to recover from the chloroform. The diameters of the calculous mass were seventeen and twenty millimetres respectively. The consistence was so soft that pressure with the thumb was sufficient to disintegrate the mass, without the aid of the screw.

March 18th.—The patient had but four passages of urine during the twenty-four hours after the operation, with scarcely a trace of detritus. There was much nausea and some vomiting from the anæsthetic. After an injection, which was followed by a free movement of the bowels, the patient expressed himself as being more comfortable in the region of the bladder and anus than he had been for many months. No febrile reaction ensued until twenty-four hours after the operation, when he had a slight chilly sensation of the feet, followed by a rise of temperature to 102° F., which passed away, however, after a few hours.

21st.—Sat up all day. Appetite good. No pain on micturition.

22nd.—Towards night had slight pain in the region of the right kidney, with tenderness on pressure. Relieved by hypodermic injection of a quarter of a grain of sulphate of morphia.

23rd.—Pain nearly gone; only felt when the patient rolled over in bed. Temperature at night 102° F.

27th.—Patient quite well. Passed a small fragment. Complains of a sensation of weight in the bladder, but no pain in the glans penis.

29th.—Sounded with Sir Henry Thompson's searcher, and detected a calculous mass.

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April 3rd.—The condition of the patient improved gradually from the time of the last session to date, when the urine had become quite clear and all febrile symptoms had disappeared.

10th.—Passed a small scale. Had been several times out driving.

11th.—On a careful search a small mass was discovered, and crushed without chloroform. Most of the detritus came out in the jaws of the instrument, and the aspirator was not used. This session was followed by a severe chill and moderate fever, accompanied with great restlessness and nervous symptoms. A hypodermic of morphine quieted the paroxysm.

12th to 15th.—A slight diarrhœa set in, but yielded to dieting and rest. A small quantity of detritus passed without pain.

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19th.—Introduced a diaphragmed catheter, with a view of irrigating the bladder and washing out sand. As the effort caused some irritation it was not persisted in. In the course of the afternoon the patient dressed, and walked about the house. An attack of pain in the region of the left kidney, followed by a chill, caused him to return to bed. A hypodermic injection of morphine arrested the chill and pain, and the temperature only rose to 102° F., and soon fell. No further pain followed this attack.

25th.—Explored with duck-billed lithotrite, and found nothing but a few grains of sand. The last exploration of the bladder, although not specially painful nor prolonged, was followed by a smart chill and fever, which were repeated the following day. From that date there has been no more fever. The general health is steadily improving. With the exception of a little sand passed on the 27th there has been no further evidence of débris of the stone. The urine is quite clear, passed without pain or impediment, and there is no pain or tenderness in the region of the bladder or perineum.

The peculiarities of this case are—1. The difficulty of the detection of stone, owing to its mortary consistence and pouched position on the left side of the base of the bladder. 2. The comparatively slight subjective symptoms, due undoubtedly to the softness of the mass, which produced little irritation of the bladder. 3. The difficulty of completing the clearance of the bladder of débris, owing to the want of firmness in the fragments and the impossibility of detecting them until within the grasp of the instrument. 4. The total weight of the dried fragments resulting from the four sessions was 5·2 grammes. The bulk may have been equal to that of a small walnut. The chemical composition principally the earthy phosphates.

UTERINE ELECTRO-THERAPEU

BY J. DIXON MANN, M.D., M.R.C.

THE therapeutic value of electricity is liable to estimated on account of its reputed uncertainty Much of this uncertainty is due to imperfect reco its physiological effects, which results in an ain tentative mode of treatment. If all the teachings of physiology could be exactly reproduced therapeutically, principles of clinical electricity would be greatly simplifie Unfortunately, many of the physiological effects of electricity have no counterpart in electro-therapeutics, owing to the impossibility of localising the current. The specific resistance of the component parts of the human body varies so largely, that within the organism the laws which govern the diffusion of currents are inapplicable. The paths selected by the current are determined by the relative resistances of the interposed tissues—resistances which differ to such an extent that it is impossible to define the direction of the current or to localise it in any special structure—e.g., a nerve. The discrepancies existing between the physiological and the therapeutic effects of electricity have doubtless encouraged a feeling of scepticism as to their correlation, and have produced a tendency to systematic neglect of the precepts of electro-physiology in dealing with disease. Without insisting too strongly upon the physiological side of the question, it must be admitted that a method of treatment founded on experimental research, checked by clinical observation, is likely to yield results vastly superior to mere empiricism. In some of the disorders of the female generative system, electricity acts as an alterative to the nutrition of the organs concerned. This is mostly due to its vaso-motor power, some aid being afforded by its power of promoting absorption. As an anodyne electricity is of great value in neuroses of the uterus and ovaries. As a stimulant it evokes uterine action, and under certain conditions determines the immediate flow of the catamenial discharge. It is obvious that the *modus operandi* of an agent capable of such diversity of action must vary with the nature of the disorder. The application of electricity, like that of other therapeutic agents, should be restricted to appropriate cases. Unfortu-

nately an idea seems to prevail that its legitimate sphere of action begins when other remedies fail, and that without any definite purpose it may be "tried" as a *dernier ressort*. To take an extreme example: what benefit could be reasonably expected to follow the use of electricity in a case of amenorrhœa due to phthisis? Much confusion exists as to the relative advantages of the induced and constant currents; they are too often regarded as interchangeable, the selection being merely a matter of caprice. A little consideration of the physiological effects of the two currents will at once determine the selection of that which will be productive of the greatest benefit in any given case.

The constant current, in addition to its physiological effects, is largely endowed with chemical and thermal properties. In therapeutics the heat-producing power may be disregarded, as the "quantity" of the current is relatively too small to produce any appreciable thermal effects on the human body. There is reason, however, to believe that the chemical action of the current is a considerable factor in the power possessed by electricity of modifying the functions of the animal economy. Allied to its chemical effects is its power of promoting osmosis and absorption, and of accelerating the movements of lymph in the lymphatics and lymph spaces. A further property of the constant current, which can only be classified under the head of catalytic action, is its power of aiding and hastening natural processes in some way which we do not as yet understand. The principal physiological effect of the constant current, in relation to the subject now before us, is its power of influencing the vaso-motor system. When the organism is subjected to the influence of the current, the arterioles dilate, and the blood-supply is increased in the neighbourhood of the electrodes, more or less in the entire region traversed by the [illegible]. The dilatation of the arterioles commences soon [illegible] circuit is closed (being preceded by a slight con[illegible] continues throughout the application, and for [illegible] wards. In addition to its direct vaso-motor [illegible] it may act indirectly—that is, on the vaso-[illegible] which the nerves supplying a given vascular [illegible]. It is difficult to obtain clinical evidence [illegible] for action, but in some cases it is advi[illegible] vaso-motor centre in the circuit, in order [illegible]nt under the most favourable conditions [illegible] full effects. The vaso-motor effects of the [illegible] are not confined to producing a temporary [illegible] quantity of blood circulating through a [illegible]rganism; repeated applications further tend [illegible]al blood stasis and to restore the circulation [illegible] to its normal character. The renewal (by el[illegible] impaired arterial tonus appears to be the secondary [illegible] of stimulation. The primary action of the current is to increase the sectional area of the arterioles subjected to its influence; on withdrawal of the stimulus the condition of dilatation shortly subsides, and gives place to a diminution in the diameter of the vessels, in the direction of their normal calibre. The influence of the constant current over local capillary congestion is, in some respects, analogous to that of an astringent fluid over an inflamed conjunctiva; the primary action of both is to produce increased vascularity, which is followed by permanent contraction of the dilated arterioles. The anodyne effects of the constant current, though well established, are not easily explained. The immediate effects are probably, in some degree, due to a species of polarisation—the excitability of both motor and sensory nerves being lessened by the passage through them of a current of electricity opposed in direction to the nerve impulse. The secondary effects may be due to altered nutrition. A qualitative distinction has been made between the action of the anode and that of the cathode by claiming for the former a sedative and for the latter a stimulating effect on the sensory nerves. In proof of this the physiological nerve condition known as electrotonus has been cited. Clinical observation, however, fails to corroborate such an hypothesis, for, as previously stated, the difficulties encountered in reproducing clinically the physiological effects of the current are insuperable. Anodyne and stimulant effects are produced by both anode and cathode; if a difference exists, it is solely quantitative, the cathode being more stimulating than the anode. Further information on this subject will be found in an elaborate and critical paper on "The Conditions of Unipolar Stimulation in Physiology and Therapeutics," by Mr. A. de Watteville.[1]

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The induced current, on the contrary, possesses feeble chemical and catalytic powers, its action being chiefly confined to the production of muscular movement. This is due to its essential nature. The induced current is composed of a succession of waves of opposite potential; these, by their rapid recurrence, keep up a state of persistent contraction of the muscular elements subjected to their influence. The primary effect of the induced current on the vascular system is to produce contraction of the arterioles; this shortly gives place to dilatation—the effect of paresis of the muscular coat of the vessels, resulting from excessive contraction. The increased vascular supply thus induced is further augmented by the movements of the skeletal muscles of the part. It is to be observed that although the induced current is capable of producing hyperæmia, its action is indirect, and the effects are much less marked, and are of shorter duration than they are with the constant current. An important power possessed by the induced current is that of stimulating the muscular structures of the womb, whether parturient or unimpregnated; we are only concerned here with the unimpregnated condition. It has been frequently observed that under certain conditions, the application of the induced current is followed by an immediate appearance of the menstrual discharge. What are these conditions? The answer to this question includes a consideration of the physiological processes concerned in normal menstruation. According to Dr. John Williams[2] the mucous membrane of the uterus is constantly undergoing a series of changes, which commence during, or immediately after, the flow, continue during the intermenstrual interval, and culminate with the commencement of the ensuing issue. The changes begin by a gradual development of the mucous membrane of the body of the uterus, which increases in thickness and vascularity until within a short time of the monthly period, when indications of fatty degeneration manifest themselves. The uterine hyperæmia reaches its maximum shortly before the hæmorrhage begins, and is reduced when fatty degeneration of the mucous membrane sets in. Kundrat and Engelmann,[3] whilst substantially agreeing with the above views, limit the period of uterine activity to a short time before the appearance of the flow, and restrict the amount of exfoliation of the mucous membrane to its epithelial covering. Accepting the foregoing statements, the ultimate cause of the menstrual discharge is molecular degeneration of the mucous membrane of the body of the uterus. When the stage of fatty degeneration is reached, another factor—contraction of the uterus—aids in determining the hæmorrhage by driving the blood from the parenchyma of the organ into the mucous membrane and rupturing the degenerated vessels. The renewal of the mucous membrane commences whilst the destructive process is going on, by proliferation of the cellular elements of the muscular wall. These changes in the uterine mucosa explain how the induced current determines immediate hæmorrhage when its application coincides with the degenerative stage. They also afford a probable explanation of the cause of its failure to do so when used whilst the mucous membrane is in process of development, as the superficial vessels are then able to resist the increased blood-pressure produced by uterine contraction. The investigations of Röhrig[4] demonstrate that the centre for uterine action is in the lumbar spinal cord. Stimulation as high up as the medulla, and even as far as the crura cerebri and optic thalami,[5] also gives rise to slight uterine contraction, probably due to indirect stimulation of the lumbar centre. Experiments made on the lower animals show that impulses may pass from the central nervous system to the uterus along the sympathetic, from the inferior mesenteric ganglion, and also along branches of the sacral nerves, respectively to the hypogastric plexus.[6]

The *rôle* usually assigned to the ovaries in relation to menstruation is that of a prime motor. In accordance with this theory an impulse is originated in the ovaries which determines an increase in the vascular supply of the entire generative tract, and which also directly influences the nutritive changes undergone by the uterine mucous membrane. The requisite stimulus is afforded by the development of a Graafian follicle, and is transmitted from the ovary to some portion of the central nervous system—the lumbar spine according to Goltz[7]—and thence is reflected to

[2] Obstetrical Journal, 1875. [3] Stricker's Med. Jahrb., 1875.
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days. I then passed my finger into the rectum, to explore the state of the prostate and base of the bladder. This manipulation also gave relief, but it was, as before, transitory. At the patient's request I continued to pass the instrument from time to time, and on each occasion with the same result of temporary relief of the symptoms, followed by a relapse after a few days.

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BY J. DIXON MANN, M.D., M.R.C.P.

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The constant current, in addition to its physiological effects, is largely endowed with chemical and thermal properties. In therapeutics the heat-producing power may be disregarded, as the "quantity" of the current is relatively too small to produce any appreciable thermal effects on the human body. There is reason, however, to believe that the chemical action of the current is a considerable factor in the power possessed by electricity of modifying the functions of the animal economy. Allied to its chemical effects is its power of promoting osmosis and absorption, and of accelerating the movements of lymph in the lymphatics and lymph spaces. A further property of the constant current, which can only be classified under the head of catalytic action, is its power of aiding and hastening natural processes in some way which we do not as yet understand. The principal physiological effect of the constant current, in relation to the subject now before us, is its power of influencing the vaso-motor system. When the organism is subjected to the influence of the current, the arterioles dilate, and the blood-supply is increased in the neighbourhood of the electrodes, and also more or less in the entire region traversed by the current. The dilatation of the arterioles commences soon after the circuit is closed (being preceded by a slight contraction), and continues throughout the application, and for some time afterwards. In addition to its direct vaso-motor action, the current may act indirectly—that is, on the vaso-motor centre from which the nerves supplying a given vascular area are derived. It is difficult to obtain clinical evidence of indirect vaso-motor action, but in some cases it is advisable to include the vaso-motor centre in the circuit, in order to place the current under the most favourable conditions for producing its full effects. The vaso-motor effects of the constant current are not confined to producing a temporary increase in the quantity of blood circulating through a portion of the organism; repeated applications further tend to diminish local blood stasis and to restore the circulation of the part to its normal character. The renewal (by electricity) of impaired arterial tonus appears to be the secondary result of stimulation. The primary action of the current is to increase the sectional area of the arterioles subjected to its influence; on withdrawal of the stimulus the condition of dilatation shortly subsides, and gives place to a diminution in the diameter of the vessels, in the direction of their normal calibre. The influence of the constant current over local capillary congestion is, in some respects, analogous to that of an astringent fluid over an inflamed conjunctiva; the primary action of both is to produce increased vascularity, which is followed by permanent contraction of the dilated arterioles. The anodyne effects of the constant current, though well established, are not easily explained. The immediate effects are probably, in some degree, due to a species of polarisation—the excitability of both motor and sensory nerves being lessened by the passage through them of a current of electricity opposed in direction to the nerve impulse. The secondary effects may be due to altered nutrition. A qualitative distinction has been made between the action of the anode and that of the cathode by claiming for the former a sedative and for the latter a stimulating effect on the sensory nerves. In proof of this the physiological nerve condition known as electrotonus has been cited. Clinical observation, however, fails to corroborate such an hypothesis, for, as previously stated, the difficulties encountered in reproducing clinically the physiological effects of the current are insuperable. Anodyne and stimulant effects are produced by both anode and cathode; if a difference exists, it is solely quantitative, the cathode being more stimulating than the anode. Further information on this subject will be found in an elaborate and critical paper on "The Conditions of Unipolar Stimulation in Physiology and Therapeutics," by Mr. A. de Watteville.[1]

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the uterus. Some authorities, amongst whom are Beigel[8] and Sinéty,[9] deny the correlation of ovulation and menstruation. In corroboration of this view are cited the exceptional occurrence of menstruation after ablation of both ovaries, and of pregnancy prior to, or during the temporary suspension of menstruation. It is beyond the limits of the present paper to discuss this question, and whilst admitting that ovulation and menstruation are not essentially interdependent, it is probable that they are ordinarily correlative. The appearance of the catamenia is an indication that the changes undergone by the uterine mucous membrane, preparatory to the reception of an ovule, have passed their acme and have become retrogressive. If the ovule is fertilised the development of the membrane continues, and the hæmorrhage is postponed until the fœtus is expelled. The development of the uterine mucous membrane and consecutive hæmorrhage may occur without the dehiscence of a Graafian follicle; and, on the other hand, an ovule may occasionally escape without the necessary stimulus being afforded for producing the nutritive changes in the membrane, and, consequently, without any external manifestation in the shape of hæmorrhage. It is sufficient to assume that an intimate relation exists between ovulation and menstruation, that normal menstruation probably includes ovulation, the latter being the essential event.

To pass from theory to practice. A comprehensive view should be taken of uterine disorders, and electrical treatment resorted to only when the causative defect is centred in the generative system, the organism, as a whole, being healthy. The treatment is often necessarily prolonged, requiring considerable patience on the part of both the physician and the patient. There is a tendency to associate electricity with rapidity of action—an association true only so far as the physical side of the subject is concerned; in electro-therapeutics the aphorism *Festina lente* is to be observed. It is useless to try to stimulate an ill-nourished or ill-developed organ to an immediate performance of its function without having previously remedied the organic defect upon which the want of functional activity depends. Imperfect nutrition demands a prolonged use of the constant current; simple atony will probably be remedied by a much shorter application of the induced current.

The special instruments required in uterine electro-therapeutics are: an insulated sound (two sizes), a cervical electrode, and two or more large disc electrodes. The sound is of the Sims pattern, the curved part being thickly coated with gold, or preferably made of solid platinum, the gold having a tendency to peel off in adjusting the curve of the instrument to the obliquity of the uterus. The stem to within two inches and a half of its curved extremity is insulated by an elastic catheter; the amount of exposed surface can be lessened whilst the instrument is *in situ* by pushing the insulating covering away from the handle, so as to maintain the insulation of all that portion of the sound which is within the vagina, but outside the uterus.

The cervical electrode consists of a small concave metallic disc mounted on a stem, the whole being insulated except the concave surface of the disc, which, when in use, is directed against the cervix, with the aid of a speculum, if required. The external electrode consists of an oval disc of flexible metal to which a conducting cord is soldered; a layer of amadou (to assist in keeping the electrode moist) is placed on one surface of the plate, and the whole is covered with wash-leather. These electrodes can be applied without any disarrangement of the patient's dress. In the following cases the measurements of current strength are given in ten-thousandths of a veber—dix-millivebers. For some purposes the division of the veber into thousandths—millivebers—does not afford gradations sufficiently delicate; to preserve uniformity I prefer always to estimate the dosage by the lesser fraction. The galvanometric reading is also simplified by the adoption of the dix-milliveber unit, as medical galvanometers are divided into ·0001 veber.

[8] Krankh. d. weibl. Geschlechts, 1874.
[9] Manuel pratique de Gynécologie, 1879.

(To be concluded.)

THE BRITISH ASSOCIATION.—The arrangements for the jubilee meeting of this Association, to be held from Aug. 31st to Sept. 8th, at York, under the presidency of Sir John Lubbock, are now complete.

ON MEDICAL EDUCATION.

BY J. C. ORCHARD, L.R.C.S. EDIN.

HAVING considered attentively the correspondence and the articles in THE LANCET, the proceedings of the General Medical Council for many years, and the various reports on Medical Education, I desire, as a medical practitioner, to make a few remarks, and to offer a few suggestions, on that great and important subject.

It appears to me that there is a general consensus of opinion that, as regards medical education, matters have come to such a pass that it is absolutely necessary that something *must* be done. For the last twenty years the burdens laid on medical students have been steadily increased, till they now can scarcely be borne. We know that nearly one-half of the medical students break down; but regarding the rejected or unsuccessful, we do not know of their blighted hopes, of their broken hearts, and in many cases of their moral ruin. The apologists of the system call the students lazy, and throw the blame on their laziness. A greater libel was never uttered. No student goes to a medical school but with the intention of working hard, and he does work hard, and it is disgraceful to attempt to throw the blame on the students themselves. Better for these apologists to admit the failure of the present system, and to assist in devising means of correction and amelioration. Medical education and examination require a thorough revision and a thorough change.

First, as to the preliminary examination. There is no doubt that every medical student, as almost every other young man, has in these days received a good general education, including algebra, mathematics, and mechanics, and I do not see why a certificate of the master or masters by whom he has been taught may not be accepted as sufficient. I would make some knowledge of Latin and Greek, to be ascertained by examination, indispensable, not because the English language is largely made up of words derived from the Latin and the Greek, but because medical terms, many thousands in number, are almost all taken from these languages, and to know those languages is to know the meaning of those terms. Let that examination be confined to the translation of a passage from a Latin and a Greek author. It may be asked of what use to a medical practitioner is an extensive knowledge of algebra, mathematics, and mechanics that students should have to undergo a severe examination in them? The answer is, none whatever, except as regards mechanics, and only a very small portion of that, which portion is always taught and explained in a very little time by the professors of anatomy and physiology in the course of their lectures. But all these matters can be quite well learned at school. Why therefore burden very young men with an examination on these subjects? Why should their young minds be harassed by them? Better by far that their mental powers be reserved for the great practical studies which they have before them, and not be frittered away and weakened by extensive preparation on such unnecessary subjects. As for foreign languages, there is not the slightest use for them. All medical works of any value published in foreign countries are speedily translated into English, and it is well known that English translations are very often better than the originals. I would therefore strike out all modern languages; at least, I would not make them compulsory. Let those who have a taste for them study them if they choose.

I know that by some people, by many indeed, the study of these subjects—that is, of mathematics, ancient and modern languages, &c.—is advocated as advantageous for mental training, and as an exercise for the memory. But what is mental training? Does not mental training go on from the time a boy enters school till he leaves school and college? Every young man about to enter on his medical studies has at school and college received abundance of mental training, and there is little occasion to harass him with the preliminary examination. As exercises for the memory, medical students will have enough of these. The very sight of their text-books, each of perhaps five hundred or a thousand pages, which have in a great measure to be committed to memory, is perfectly appalling. Let the mental training and the exercise of the memory be light, lest by excessive exercise they may be weakened and im-

paired. We know that the mental powers and the memory are increased by exercise; but it must be within limits. It is like muscular exertion to a labouring man. Too great or too long-continued, and the strongest man breaks down. So also mental labour and the exercising of the memory, particularly in very young men, when too great or too long-continued, end in disaster. Let, therefore, the mental labour and the exercising of the memory in preparing for a severe preliminary examination be, with the exception before mentioned, entirely spared to the medical student. Let, therefore, the preliminary examination be cut down to the lowest possible limits. Let it be confined entirely to Latin and Greek, and let the certificates of schoolmasters be received and accepted on such branches of education as reading, spelling, composition, arithmetic, algebra, mathematics, and mechanics. Also, that in case of failure to satisfy the examiners in Latin and Greek, such failure be not a bar to students entering on their medical studies, but that after a certain time, say three or six months, they be taken up for examination again. It would be a hard matter indeed if a student were to be thrown back a whole year because he had been a little deficient in his Latin or Greek.

I now pass on to professional studies and professional examinations. And first let me say that no one should be allowed to commence his medical studies till he is seventeen years of age. Some parents think they cannot push on their sons fast enough. The result is that we see among the students mere boys of fourteen or fifteen years, very unfit for the severe study required of medical students. Better let their young minds be hardened and developed, at least to a considerable extent, before commencing their medical studies; there would then be less risk of breaking down, and less risk of injury to the brain, which in too many cases is the result.

At present the burdens laid upon medical students are by far too great, and by far too much is expected from them. Notwithstanding, we see indications of a still further increase of their burdens. We see specialists pressing to the front and demanding a course of lectures, with examinations, in their specialities. We see oculists demanding a course of lectures on diseases of the eye, such demand in one instance at least having been conceded; others insist on a course on mental diseases. We may soon have aurists claiming a course on diseases of the ear, and dermatologists a course on diseases of the skin. Where is all this to end? Will no mercy be shown to the poor students?

As to the professional examinations, it is not so much the mere examination that I object to. The questions proposed may be simple and easy enough. The great objection is, that not knowing on what part of a subject he is to be examined, the student must be prepared on every part of it. Now, that is an utter impossibility. Everyone knows, as has been well said in a late article in THE LANCET, that the human mind can only hold a certain amount of knowledge, and that to attempt to pack into it such a quantity of useless rubbish not only injures it, but prevents the proper acquisition of practical and useful matter. Owing to the great extent of the subjects of study, students are now absolutely compelled to pass over portions of them. They learn as much as they can, but they cannot learn all. They go up for their examination in the hope that they will be taken on the parts they do know. Being disappointed in passing, as very many of them are, they try the examination at some other university or college, and having been taken on the parts they do know, they pass. A hue and cry is immediately raised against these bodies for passing those who have been rejected by others, forgetting in their simplicity that the students have been examined on those parts they happened to know, whereas they were rejected before because they were taken on parts they did not happen to know. At present when a student, even the best, goes up for examination, it is the tossing up of a shilling whether he pass or not. It is mere chance and little or nothing else. Let all this be reformed. Let the number of subjects of study be reduced, or rather, while students should be required to attend a course of lectures on certain subjects, let there be no examination on them, means being taken to see that the students attend regularly. No student can attend a course of lectures on such subjects as chemistry, botany, natural history, materia medica, and medical jurisprudence, without carrying away a good deal of what he hears and sees. It is a very different thing to set him down to text-books on these subjects, perhaps of five hundred or a thousand pages each, and compel him to commit them to memory so as to undergo an examination in them. Let, therefore, these examinations on chemistry, botany, and other medical rubbish be discontinued, and let the energies of the students be directed more to practical matters.

(To be concluded.)

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

GUY'S HOSPITAL.

CASES OF ANEURISM.

(Under the care of Mr. BRYANT.)

THE two cases recorded below illustrate the important difference between an aneurism occurring in a part of the body where mechanical and surgical procedures cannot be adopted and one in a situation so accessible as the popliteal space. In Case 1, after a long but unsuccessful trial of digital and mechanical compression, the main bloodvessel was successfully tied after the Hunterian method; whereas in Case 2 only distal ligature was possible, though scarcely practicable, and the patient died from bursting of the aneurism.

CASE 1. *Popliteal aneurism; ligature of femoral after fa lure of compression; œdema of leg; aneurism cured* (from notes taken by Mr. ADENEY).—Geo. B——, aged forty-five, a tea-cooper, but formerly in the army, was admitted into Job ward on January 29th, 1880. He had had rheumatism, gonorrhœa, and a soft chancre, but no syphilis. Four months before admission, after a hard day's work, patient felt pain on both sides of the left knee. This ceased, but returned in about a fortnight, and then continued to trouble him. He noticed a swelling coming in the popliteal space, but did not discover pulsation until January 3rd, after walking twenty miles the day before. It continued to increase and became more painful.

On admission, in the left popliteal space there was a pulsating tumour about the size of a hen's egg. It was compressible and very thin walled. When fingers were placed on each side of the tumour the pulsation separated them. Sufficient compression upon the femoral artery caused the tumour to disappear. Through the stethoscope a loud but not very harsh bruit was heard over every part of the tumour, and was not distinctly double. Pulsation of femoral artery was unusually strong, the impulse being visible down the thigh. There was no œdema of the left leg or foot. There was a varicose condition of the subcutaneous veins of the leg. The anterior peroneal artery was larger than the anterior tibial at the ankles. There were no signs of aneurism in any other part of the body, except that rather distinct pulsation was felt in the right popliteal space. The heart's apex beat was enlarged, and situated in the mammary line. There was an aortic systolic bruit, and the radial pulse was hard. The left knee measured over the centre of the patella 14¼ inches, the right 13¾. The diet was restricted to six ounces of food a day. On the 30th at 10.30 A.M. digital pressure was commenced, assisted with ten pound pressure on the femoral artery, and kept up until 10 P.M., when a fifteen pound was fitted to compress the femoral, and the patient held it in position until he dropped asleep on Jan. 31st at 3 A.M. The weight had shifted, but almost completely stopped the circulation of the leg. The weight was taken charge of by students from 9.30 A.M. until 10 P.M. At 11 A.M. the tumour was much firmer walled, but still pulsated when the weight was removed. The limb was cold, and almost complete anæsthesia existed from the thigh downwards.

On Feb. 2nd the tumour was smaller and much harder, but distinctly pulsatile. Notwithstanding the low diet the femoral artery pulsated with great force.—On the 3rd digital pressure was again applied from 10.30 A.M. until 10 P.M.—On the 4th the patient when lying quietly did not suffer

pain in the knee, but distinct pulsation was seen and felt in the centre of the popliteal space. The patient slept well.—On the 10th digital pressure was applied from 10 A.M. to 10 P.M., but with some intermission, and again next day from 10 A.M. to 10 P.M. The patient then held the weight on the artery at Poupart's ligament until 11 P.M.—On the 12th the patient again held the weight many hours. There was no pulsation, but no hard tumour could be felt.—On the 13th the patient again kept the weight on some hours, and again on the following day he controlled the circulation very effectually with the weight.—On the 16th pulsation in the popliteal space was much diminished.—On the 20th digital pressure was kept up for twenty-four hours, from 5 P.M., but without any improvement.

On the 21st Esmarch's bandage was applied to the foot and leg up to the knee. The patient then stood up to fill the sac; the bandage was then carried lightly over the swelling and extended tightly in a spiral manner up the thigh to the upper third. This was left on for an hour, but the pain was so intense that it had to be removed, and the patient compressed the femoral artery with a weight until 12 P.M.

On the 27th, under chloroform, the femoral artery was tied with a catgut ligature and the ends cut off.

On March 1st the appetite was good; patient doing well, Only once had temperature gone up to 100°.—On the 4th, when the wound was dressed it appeared to be healing very slowly; but on the 7th he had much pain in the knee. When the wound was dressed on the 8th it was widely open, with a granulating surface. There was not much discharge.—On the 21st the temperature was 102·2°; and on the 22nd he had a rigor at night. Ordered ten drops of tincture of perchloride of iron and five grains of sulphate of quinine, every four hours.—On the 25th, evening temperature 102·4°; but patient felt well. He complained of tightness over the line of the artery as far as the popliteal space. A cordlike body could, he said, be felt above the wound, which got rather tender near the wound.—On the 27th some dark, thick blood oozed from the wound in the afternoon. Temperature, which rose to 104° on the previous evening, was now 99·6°.

On April 2nd he complained of profuse perspiration, and of cold shivers at times. Temperature 104°.—On the 5th there was an increasing discharge from the wound, and there was some burrowing about the edges. Temperature, morning 101·8°.—On the 8th the wound was healing again.—On the 10th there was a little discharge; patient felt quite well.—On the 14th œdema of calf, foot, and back of thigh appeared. The wound was almost healed. He could bend the knee freely. There was no effusion. He had free movement of the hip. The heart's apex was two inches below and an inch outside of the nipple. The resonance of the chest was good. Hepatic and splenic dulness were not increased; aneurismal tumour certainly larger and softer, as if about to break up.—On the 16th the wound was closed very nearly over.—On the 26th the leg below the knee was very œdematous.

On May 1st he was very well, and up. Pulsation of an anastomotic branch and femoral could be felt; œdema much diminished.—On May 14th the leg got very œdematous after being up a few hours. No pain in leg, but said it felt heavy when walking.

CASE 2. *Aneurism of abdominal aorta and common iliac; rupture; death* (from notes taken by Mr. UNDERWOOD).—Robert H——, aged forty-two, a labourer, was admitted into Job ward on July 13th, 1880. He had been in the army, and served in India, and had had syphilis and bubo. On the evening of March 23rd, 1880, after shifting shot, he noticed his leg began to swell. A medical man prescribed hot fomentations. Four days later he went into the infirmary, where the leg was elevated and put up in cotton-wool and flannel bandages.

On admission into Guy's on July 13th he was not a very healthy-looking man; he was sallow, but well nourished. The measurement of legs at groin were: Left, 20 in.; right, 25½ in. First mark: Left, 19 in.; right, 24⅝ in. Second mark: Left, 15⅝ in.; right, 17⅝ in. Knee: Left, 13½ in.; right, 15 in. Calf: Left, 12⅝ in.; right, 14½ in. Ankle: Left, 8⅝ in.; right, 8⅞ in. Heel and instep: Left, 12⅜ in.; right, 12⅞. The right leg was brawny and hotter than the left, though the right foot was colder. A bruit was heard in the right inguinal region. The thigh was very hard, with a superficial œdema, and the right calf was firmer than the left, which was flabby. There was no œdema about the ankles; the skin of buttock was thin and natural looking. There was no pulsation either in posterior tibial artery or right femoral. Between Poupart's ligament and umbilicus there was a pulsating swelling, but no distinct lump; unlimited superficially, and about 1½ in. in width. The bruit was lost 1½ in. from the umbilicus. There was no protrusion through the sacro-sciatic notch. The bruit was heard over the spine about the bifurcation of the aorta. The right limb grew softer and decreased in size.

On Aug. 4th he vomited both food and medicine, and two days later it was noted that the bowels had not acted for a week. Patient had much pain in the leg. He had not taken any solid food for two or three days.

On Aug. 7th the abdomen was considerably distended. There was great pain over the course of the external cutaneous nerve. The aneurism could be felt as low as the brim of the pelvis. Next day the patient died from bursting of the aneurism.

It should be added that on July 27th Dr. Pye-Smith examined the patient and reported as follows: "Arterial system generally appears unaffected. The aneurism of the iliac may also affect the aorta, though I do not find absolute proof of this. If so, it is quite the lower part. The only operative interference suggested (unless distal ligature) would be compression of the aorta. But I would recommend absolute rest, constant immovable position of the thigh, rather scanty food, very scanty drink, and full doses of the iodide of potassium up to thirty and even sixty grains, three times a day." On July 30th the diet was eight ounces of bread, four ounces of meat, two ounces of butter, and one pint of fluid. Ice to suck.

Necropsy.—The aneurism involved the bifurcation of the aorta. The pouch, which was evidently old, included the orifice of the left common iliac, which was completely occluded by old fibrinous material. From the right side the bulging included the left common iliac. Here was the large sac which, dissecting under the peritoneum, formed the large tumour felt in the iliac fossa. There were no thrombi in the veins. The sac had ruptured into and beneath the peritoneum.

EVELINA HOSPITAL.

TWO CASES OF HODGKIN'S DISEASE.

FOR the following notes we are indebted to Dr. W. Hale White, resident medical officer.

CASE 1 (under the care of Dr. BUCHANAN BAXTER).—F. C—— aged eight years and a half, a boy, was admitted into Lionel ward on March 31st, 1881. Mother was phthisical; father rheumatic. Patient had been well fed. Had had scarlatina and whooping-cough, but was not affected with congenital syphilis. He had always been delicate. Two years and a half before admission he had ulceration of the cornea, and six months later some lumps appeared on either side of the neck at the angles of the jaw. It could not be ascertained with certainty that they followed the scarlatina. The glands were slightly tender at first, and spread downwards to the clavicle. A tumour in the anterior part of right axilla appeared a week before admission. It was stated that the inguinal glands had been enlarged but had become smaller. During the last two years he had become pale and lost his appetite. He had never lived in an aguish district, and there was not a history of ague in the family, but mother lived at Plumstead.

On admission, the boy was thin but not markedly anæmic. There were symmetrical tumours on each side of the neck, evidently enlarged cervical glands. They were not tender, and there was no redness of the skin. The largest was behind the angles of the jaw. They extended under the sterno-mastoid and down to the clavicle on both sides, and on right side only there was a tumour just below outer part of clavicle, and a second in axilla. No other glandular enlargement could be made out. Abdominal and thoracic organs were normal to physical examination. Large oblong opacity of right cornea, one the size of a pinhole on left. There were pitted cicatrices as of large pustules on vertex of scalp. No otorrhœa. Blood, by hæmocytometer, contained nine white corpuscles to 500 red, the latter were diminished to ·46 of the normal number; by hæmochromometer, colouring matter was 56 of the normal quantity. Optic disc could be seen only in right eye, it was dark in colour. The retina around it was woolly, but the whole edge could

be made out. No hæmorrhages were visible. Pulse 120; temperature 100·2°. Urine non-albuminous. Weight 2st. 10lb. 8oz. On April 28th it was noted that since admission he had wasted much, especially during the last week. All the glands had increased in size, the axillary one was tender. No fresh ones had appeared. The boy was listless, thirsty, drowsy, and had lost his appetite. He had occasional epistaxis. A week after there was coarse crepitation over whole of upper lobe and lower half of lower lobe of left lung. No evidence of consolidation or pressure on bronchi. Blood, by hæmocytometer, showed 49 white corpuscles to 500 red, the latter being diminished to ·52 of the normal number; by hæmochromometer, colouring matter was ·39 of the normal quantity. Several masses of globuline. Several leucocytes showed amœboid movements. Some of the red discs were tailed and pear-shaped.

On May 4th it was further noted that during the last few days he had had occasional convulsions, was much weaker, and had intense headache; was very anæmic; took very little food; did not sleep without morphia, and had much cough. Some petechiæ had appeared on the arms. Next day he died quietly in the morning.

Throughout the illness the temperature had, with the exception of three times in the morning, been above normal. As a rule, it was higher in the evening than the morning, the former averaging about 101·4°, and the latter about 100·4°. The highest temperature was 103·8° one evening. The chart showed no regular type, but most nearly approaches that of hectic. He was treated with solution of arsenic, beginning with three minims, and increasing to seven minims, three times a day.

Necropsy.—Brain normal.—Thorax: Œdema of areolar tissue in anterior mediastinum. Thymus greatly enlarged and hard, attached at lower part to cheesy gland. This enlargement was found to be apparent only, and due to the stretching of the thymus over the enlarged glands. Pericardium contained one ounce and a half of clear serum; no pericarditis. The heart was normal. The right pleura was coated with recent lymph, and contained straw-coloured serum. Left pleura was healthy, except for old adhesions. Under the costal pleura, on right side, about a dozen small yellow nodules were seen as large as hemp-seeds. The trachea and bronchi were not obviously pressed upon; but some glands were so enlarged about the primary divisions of the bronchi that these may have been pressed upon. The thyroid gland was large and hard. Some of the posterior mediastinal glands were enlarged to the size of filberts. On section they were cream-coloured, mottled with black, not softened; one gland was calcareous. The left lung was crepitant, congested at base, and exceedingly œdematous; the bronchial tubes contained pus; no tubercles; at the edge of the lower lobe, behind in the lung tissue, several yellow spots, the size of a pea, were seen, evidently adventitious. The right lung was crepitant, congested at base, with œdema of lower lobe. There were signs of bronchitis in the upper lobe. There was no peritonitis. The liver was pale and flabby, but without deposits; weight 26½ oz. The spleen contained two or three cheesy glands in the hilus; the surface was normal; the parenchyma dark with normal Malpighian bodies, and adventitious cream-coloured, hard, sharply defined, irregularly distributed growths varying in size from a hemp-seed to a French bean; weight 3½ oz. The kidneys were large, pale, and flabby; the capsule was easily stripped. In the cortical substance there were three adventitious growths, as in the spleen, one as large as a pea, others the size of pin's heads; weight 7 oz. The intestines were normal. The mesenteric glands were healthy; those at head of pancreas were enlarged, cream-coloured on section; no mottling; contained pale nodules; probably incipient calcareous change; hard and adherent. Inguinal glands not enlarged. The pancreas was healthy, as were also the testicles. The glands in the neck, as at head of pancreas, were adherent to sheath of vessels on the left side. The tonsils were normal. The cut section of sternum (only bone examined) was normal.

CASE 2 (under the care of Dr. FREDERICK TAYLOR).—G. D——, aged two years and three-quarters, a boy, was admitted into the Gladstone ward Feb. 22nd, 1881. The mother was healthy, though she had had three miscarriages. The father had had acute rheumatism, otherwise he was healthy; one of his ancestors died of bronchocele. The child had been well fed, and had a submaxillary abscess when cutting his teeth. There was no history of previous illness, no congenital syphilis. A year before admission the left supra-clavicular glands began to enlarge, nine months later those along the left sterno-mastoid, and three weeks before admission those in the left axilla. For two months the child had been taking cod-liver oil, arsenic, and iron, but the glands had grown rapidly. He had never lived in an aguish district, and there was no history of ague in the family, but he was born in a very damp locality.

On admission he was well nourished, anæmic, but not emaciated. He was remarkably plump, and if it were not for the anæmia, would have looked an extremely robust child. On the left side of the neck there was a large tumour, evidently enlarged glands, reaching from the angle of the jaw and about the mastoid insertion of the sterno-mastoid muscle down to the middle of the clavicle. In the left axilla the glands were enlarged to the size of a hen's egg, and stretched under the sterno-mastoid, and the inguinal glands were slightly enlarged on both sides. All these enlargements were slightly tender, but not reddened. No other glandular enlargement could be made out. The abdomen was distended; the spleen was enlarged down to the umbilicus. The limit of the hepatic dulness was midway between the ribs and the umbilicus. The thoracic organs were normal to physical examination. Blood: The hæmocytometer showed a slight increase of white corpuscles, with diminution of the red to ·5 of the normal number; by hæmochromometer, colouring matter was ·45 of the normal quantity. The child was so extremely irritable and fretful that the general examination was difficult, and a satisfactory examination of the eyes was impossible; but, as far as could be seen, the discs were healthy, and there were no hæmorrhages.

On March 21st it was observed that since admission he had become extremely anæmic. All the glands had enlarged, but no fresh ones had appeared in any part of the body not previously occupied. He did not take food well; was exceedingly fretful and irritable. There was no evidence of pressure on any organ. The veins over the glands were much enlarged, but there was no sign of any suppuration about them.

On April 10th he was more anæmic; much worse; very irritable. Vomiting constant, so that he had to be fed by enemata. There was some dyspnœa, but no other evidence of pressure on the bronchi. No fresh symptoms.

On the 11th he died quietly in the morning.

For the first fortnight the temperature was very little above the normal, but at the end of that time it suddenly mounted to 102·4°, and ranged between 101° in the morning and 102·6° or 103° at night for five days. Then till March 30th it kept very near 100° both night and morning, and from that day till death it kept at about 101·6°, with a slight rise in the evening. He was treated part of the time with solution of arsenic.

Necropsy.—Brain was normal. Thorax: Behind the junction of the left third rib with its cartilage was a tumour about the size of a large marble; this was evidently a new growth. No enlarged glands or other new growth in the thorax. Heart was slightly enlarged. The lungs were healthy. Abdomen: No peritonitis. Liver weighed 20 oz., enlarged, very pale and waxy looking; no deposits. Spleen weighed 5 oz. enlarged; in the anterior part near the surface was a deposit of hard cheesy-looking matter; a few smaller ones were scattered. Mesentery thickened and opaque, some of the mesenteric glands being enlarged. The intestines, kidneys, and testicles were healthy. Enlarged glands were found to be nowhere adherent to each other or to surrounding structures. On section they were for the most part greyish, glistening, and opaque, but some glands were translucent in the centre. They were all of soft consistency, but in only one was there any evidence of caseation.

Microscopic examination of organs.—In all cases these were hardened in Müller's fluid, cut with a freezing microtome, stained with logwood, and mounted in dammar. Liver: There was no unusual increase of connective tissue, but occasionally between the lobules small collections of nuclei were seen very much crowded together. These were smaller and more oval in shape than those of the hepatic cells. They did not apparently bear any relation to the vessels. The liver cells were each distinct with a good nucleus. They were large and more crowded towards the periphery of a lobule than in the centre. The portal canal was not dilated. Spleen: The fibrous septa were much thicker than natural. There were several masses of lymphoid tissue, with a space round them, and more lymphoid outside this. These accumulations were very distinctly marked off from the surrounding splenic tissue, whilst there

were others which merged gradually into it. It was difficult to say which of these were new growth of lymphoid tissue and which were Malpighian bodies. Lymphatic gland: A section showed that the enlargement was entirely due to a hypertrophy of the normal structures of the gland. There was no evidence of cheesy degeneration. The new growth from the anterior mediastinum was in structure exactly similar to the lymphatic gland, except that the nuclei were rather smaller and more numerous.

Medical Societies.

OBSTETRICAL SOCIETY OF LONDON.

AT the meeting of the Society on June 1st (Dr. Matthews Duncan, President, in the chair),

Dr. GODSON presented a cast of a child's head, showing a depression after delivery by forceps, which he had shown at a previous meeting of the Society.

Dr. GALABIN showed microscopic sections from two cases, illustrating the histology of cancer of the internal surface of the body of the uterus. They showed a transition from cylinder-epithelioma to carcinoma. The tissue was removed by curette. In the first case, in which the uterus was movable and but slightly enlarged, there was proliferation of glands, with upgrowth of processes from their walls filling up the lumen. In the second case, in which the uterus was fixed and nodular, there was, in addition, infection of the stroma with epithelial masses. He had found this cancer of the body of the uterus relatively not uncommon in virgins, but had hardly ever met with the ordinary cancer of the cervix where there was proof of virginity.—Dr. WILTSHIRE related a case in which, after thorough removal of the malignant growth and the use of perchloride of iron, the patient, a lady sixty years of age, lived three years all but one month. When cancer of the body of the uterus was diagnosed removal was desirable where practicable.—Dr. CLEVELAND hoped that the time would come when such an exact diagnosis of the disease in its early stage might be established as to warrant recourse to more radical measures than had been carried out by Dr. Wiltshire—namely, the entire removal of the uterus.—Dr. HEYWOOD SMITH added his testimony to Dr. Galabin's as to the relative frequency of cancer of the body of the uterus in virgins, and cited a case of a lady aged fifty. He considered that when such cases could be diagnosed early enough the uterus should be removed, leaving the cervix as a stump.—Mr. DORAN urged the importance of the fact mentioned by Dr. Galabin, that cancer of the cervix was almost peculiar to impregnated women, since it was among such that the numerous forms of erosion were so frequently found. The cure of such a form of erosion as preceded cancer might absolutely avert malignant disease.—The PRESIDENT considered that total extirpation of the uterus was at present too dangerous an operation. He had known a case of cancer of the cervix in a virgin.

Dr. WILTSHIRE showed the Uterus, Fœtus, and Placenta from a case of Utero-vaginal Rupture. The placenta, which was prævia, was found in the vagina, and the head, which was low down, was delivered by the obstetric house-surgeon. The patient rapidly sank. The uterus was large and thick, containing many small fibroids.

Mr. ALBAN DORAN showed, for Dr. BANTOCK, a large thick-walled single Cyst of the Great Omentum, removed by operation. The symptoms had resembled those of ovarian cyst. Once the cyst had ruptured and filled again, and several times it had been tapped. At the operation there was great difficulty in separating the cyst from its connexions. A fold of mesentery separated the cyst from the pelvic organs, which were absolutely normal. The patient was doing well four days after operation.

Dr. GODSON showed Marshall's Patent Sectional Feeding Bottle, which had a movable front, enabling the fingers to be introduced to clean the interior.

Dr. HICKINBOTHAM related a case of Placenta Prævia, complicated by a large myoma. The patient was a delicate primipara of small stature, at full term. She had previously aborted. She had been in labour six hours and had lost much blood. The os was dilatable, large enough to admit two fingers. The placenta presented completely; no edge could be felt, and through its centre, which seemed to be the thinnest part, a rounded mass was detected, supposed to be the fœtal head. The author decided to break through the centre of the placenta with the view of turning. Having torn through it he discovered that the round mass was a large tumour, upon which the placenta was attached. The delivery of the placenta was therefore completed, after which the hæmorrhage greatly abated. Version was performed, the after-coming head perforated, and extraction effected with the aid of the crotchet. A terrible attack of septicæmia followed, and for a fortnight Mr. Hickinbotham almost despaired of the patient's life. The tumour sloughed, and became protruded through the os. On the tenth day a softened and fetid portion was extracted, and the remainder painted with pure carbolic acid. In three months the uterus was freely movable, and its cavity of normal length, but the patient had not again menstruated after eleven months. If the placenta had not been prævia the author would have preferred Cæsarean section.—Dr. BARNES said that no general rule could be laid down for labour complicated by fibroid tumours. Sometimes necrosis occurred when the tumours did not obstruct delivery, and the cases might do well. Sometimes the tumour might be pushed out of the way, and delivery effected by craniotomy or turning, or enucleation might be available. In extreme cases Cæsarean section might be necessary, and in such cases it should be considered whether Porro's method of removing the uterus and ovaries would not be best.—Dr. HICKINBOTHAM said that the size and wide base of the tumour precluded enucleation. He did not agree with Dr. Barnes as to the advisability of removing the uterus, considering that the results of the operation had been very unsatisfactory, but he thought it would be sufficient to remove the ovaries and Fallopian tubes in performing Cæsarean section.

Dr. MANSELL MOULLIN related a case of Myxœdema. The patient was aged thirty-eight, and mother of four children. At the commencement of her last pregnancy she had been troubled with swelling about the eyes, which continued for a month or two. Shortly after delivery the swelling about the eyes reappeared, and from this period she dated her present symptoms, which were those characteristic of myxœdema, as recently described, the urine being free from albumen.—Dr. GERVIS had had three cases of myxœdema referred to him to examine the pelvic organs, but found nothing abnormal. Two had passed the climacteric, but one had not.—Dr. WILTSHIRE suggested that the patient should be shown. The affection was, he believed, degenerative, and often occurred about the approach of the climacteric.—The PRESIDENT had two examples of the disease now under his care. One was a married lady, under forty, who had borne children, but came to him on account of amenorrhœa. In the other patient, aged forty, the periods were regular and copious, but the disease was described as beginning with exophthalmos and amenorrhœa for a year.

Dr. BARNES read a note on the so-called Lithopædion, being a supplement to the author's paper on so-called "Missed Labour." The author had examined the specimen in the Hunterian Museum from Dr. Cheston's historical case, undoubtedly one of extra-uterine fœtation, and it had been minutely examined by Mr. Doran. The abdominal viscera and thoracic organs were quite soft, but impregnated with lime-salts. The skin and subcutaneous tissue of the front of the thorax and abdomen were thick and infiltrated with lime-salts, so as to feel gritty and friable; the same structures in the posterior part of the body were very thin and converted into calcareous plates. Another specimen in the Hunterian Museum, without a history, but apparently a fœtus of not more than seven months' development, had also been examined by Mr. Doran. It showed a more advanced calcification of the shrunken soft parts. The surface was brittle and not remarkably hard. The lungs were powdery and effervesced with hydrochloric acid. In a specimen in St. Thomas's Museum the cyst wall was calcified, and there were calcareous plates in the skin. The viscera and muscles were soft.—The PRESIDENT said that the paper impressed him with the necessity for greater care than he and other authors had used in applying the word lithopædion. The observations confirmed the remarks which he made on the reading of Dr. Barnes' paper, that there was never a stone-child really, but only petrifaction of the membranes and adjacent fœtal parts.

OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.

THE concluding meeting for the session of this Society was held on the 6th inst., when the Treasurer's Report was received, and the election of officers and Council for the ensuing year took place. The President, Mr. Bowman, gave a short address, reviewing the work of the Society during its first year of existence. He remarked that there were now 141 ordinary members, and four honorary members. The list included nine Scotch, seven Irish, and forty-three provincial members, whilst fifty members of the Society were physicians. The average attendance at the meetings had been considerable, and there had been no lack of communications. He adverted to the debate on Optic Neuritis, and the report on Colour-Blindness, to which special evenings had been devoted, and remarked that the Transactions would be published in October next. In conclusion, he reminded the members of the forthcoming International Congress, and hoped they would be able to attend its Ophthalmological Section, to which a large number of communications would be made.

The following is the list of officers and members of Council elected to serve during 1881-2:—President: Mr. Bowman. Vice-Presidents: Mr. George Critchett, Mr. Hulke, Dr. Hughlings Jackson, Dr. Argyll Robertson, Mr. Frederick Mason, Mr. Augustin Prichard. Treasurer: Mr. J. F. Streatfeild. Secretaries: Dr. Stephen Mackenzie, Mr. E. Nettleship. Other Members of Council: Mr. James E. Adams, Dr. Edwyn Andrew, Dr. Brailey, Mr. Brudenell Carter, Dr. Buzzard, Mr. John Couper, Dr. Gowers, Mr. C. Higgens, Mr. Henry Power, Mr. Vose Solomon, Mr. Waren Tay, Mr. T. Shadford Walker.

Reviews and Notices of Books.

A Practical Treatise on Surgical Diagnosis. Designed as a Manual for Practitioners and Students. By AMBROSE L. RANNEY, A.M., M.D., Adjunct Professor of Anatomy in the Medical Department of the University of the City of New York, &c. Second Edition. New York: W. Wood and Co. London: Sampson Low and Co.

EVEN the most skilled diagnosticians have felt a difficulty in imparting to others the means by which they are able to distinguish diseases and injuries which have close resemblances. Indeed, after long practice, certain points are recognised almost without effort or volition, and it is then difficult to tell another all the steps of the mental process by which the final result is attained. It is also natural that personal experience should have great weight in forming a diagnosis, and by such experience alone will the relative importance of symptoms come to be duly appreciated. In the work before us the tabular form of diagnosis is employed, the signs of two diseases which it is desired to contrast are placed in parallel columns, and so by reading the columns across the page a differential diagnosis may be obtained. There are obvious difficulties in the way of a satisfactory accomplishment of such a task. The first is in the choice of states to contrast, next in the dogmatism which is necessary in this form of teaching. The author has fairly succeeded in overcoming these difficulties. But there are points in which the book could be easily improved. Inaccuracies such as the use of the term "ossification" instead of "calcification" of atheromatous arteries ought not to disfigure a second edition of such a book. Again, we are told that in aneurism the veins are "normal in their appearance," and there are other cases in which it is evident that fidelity to the tabular arrangement has necessitated some sacrifice of accuracy. But, as must always be the case, the real drawback to such a way of teaching diagnosis is the necessary disregard of proportion. It is impossible to show clearly what distinctions are of value and what are not; this can only be learnt by practice at the bedside. And hence we object to the use of the term "practical" in the title of the book, for, essentially, it is not a practical but a theoretical mode of teaching diagnosis. Dr. Ranney has also included in his tables pathological facts which are no doubt distinctions between diseases, but are of no service in the diagnosis of those diseases. For example, to aid us in the diagnosis between typhlitis and perityphlitis we are told that one is an inflammation of the cæcum, the other inflammation of the connective tissue about the cæcum; and similar instances might be mentioned. We think, too, that a treatise on surgical diagnosis cannot be regarded as complete or practical which does not give instruction in the way to search for symptoms, and in the manner of conducting systematic examinations.

The History of Salt. By EVAN MARLETT BODDY, F.R.C.S., F.S.S., L.R.C.P. London: Baillière, Tindall, and Cox. 1881.

MANY articles of diet have had monographs devoted to their description, but the honour is surely given to salt, in the work before us, for the first time. The topic might be thought to be a barren one, but since the geology, geography, physiology, and medicinal properties of salt are discussed, as well as its history proper, there is, it will be evident, a good deal of material for the ninety-five closely-printed pages of which the work consists.

In the concluding page Mr. Boddy hints at his anticipation that the "candid reader may derive improvement" where "the critic will find only matter for censure." We think that his anticipation is well founded. The book contains a considerable amount of information which the popular reader (for whom it is designed) will doubtless find instructive and interesting, but at the same time there is much in its matter and manner which the critic can hardly pass unnoticed.

The object of the book is stated in the introduction to be the refutation of the assertion that salt is injurious. A perusal of the book, however, suggests that this is rather an excuse than a reason for its production; it breathes such an intense regard for this, sometimes despised, article of diet, that a desire to extol rather than to confute would seem to have actuated its author. The introduction of salt as an article of diet Mr. Boddy is inclined to ascribe to the Egyptians, mainly on the hypothetical authorship of the Book of Job and its well-known mention of the subject. But there are many facts to suggest a doubt whether the use of salt by man in countries where it abounds ever had a beginning except with the human race itself, since we find it eagerly sought by wild animals wherever it occurs on the surface of the ground. In countries in which salt does not exist in a natural state its consumption can only have followed the development of commercial intercourse, or of sufficient intelligence to extract it from water or vegetables; and the high estimation in which it was held is evident from the fact that small pieces of rock salt formed one of the primeval forms of money. The relations of animal and vegetable life to salt are discussed at length, and illustrated by a number of interesting facts, collected evidently with much care.

In the chapter on the medicinal and dietetic properties of salt the author is carried far beyond the limits of fact by his enthusiasm, and makes questionable and even erroneous assertions with an air of indisputable authority. A partial system of saline (or unsaline) pathology is enunciated. "The blood of scrofulous or strumous persons does not possess its due proportion of salt; and the only way to make up for this deficiency is to use it freely." "The chronic inflammation which attacks the joints in scrofula sometimes occurs, not so much from the unhealthy low state of the

system, but rather from the impure condition of the blood resulting from the partial absence of salt." When young persons present pimples and blotches on the face, "if we were to question them closely we should find that salt is to them an almost unknown article of diet." "Scurvy originates not from wholesome salted provisions and the want of vegetables, but from impure and putrid food." "Intestinal worms generate much more rapidly, and take a firmer hold on their victims, even if there is but a partial absence of salt in the blood." "The English working classes are nearly if not altogether unacquainted with the benefit of salt, and very few indeed utilise it as they should, so that we can easily understand why they are so infested with intestinal parasites," which, we are elsewhere told, "prove conclusively that the individual is more or less a stranger to salt." Nearly the whole utility of all mineral waters—even of chalybeate—is due to the presence of common salt. In health "the whole system is permeated with the life-giving and health-preserving chloride of sodium, and the coagulation of the fibrin is prevented by nothing else but that mineral and inorganic substance—salt." "By it the hydrochloric acid is supplied to the stomach.....and it likewise furnishes the alkaline phosphate." How chloride of sodium furnishes phosphoric acid is a problem for the solution of which the author apparently relies on the chemical knowledge of the reader. Columns might easily be filled with similar passages, for the author repeats himself in almost every page. The above will more than suffice. We cannot but regret that the portion of the work on which the author should speak with most authority contains so much that is not far removed from nonsense. The loose assertions with which it abounds are unfortunately expressed in an equally loose style, the meaning of the sentences being not always that which the author evidently intends.

Plastics and Plastic Filling. By J. FOSTER FLAGG, D.D.S., Professor of Dental Pathology and Therapeutics in Philadelphia Dental College. London: Trübner and Co.

THIS is a comprehensive and well-written book on the subject of which it treats. The author's professional standing and large experience justify the publication of his views with regard to the employment of plastic materials in the treatment of decay occurring in teeth. His remarks concerning the employment of gold as a stopping in decay of teeth which are below the average development of structure, or in which, by the inaccessible position of the cavity, a perfect gold stopping cannot be insured, are well worthy of careful perusal. The author states emphatically that many teeth are lost owing to the injudicious use of gold. Such a statement, coming from one who has been nurtured in the land of "gold stoppings," would scarcely have been made without mature observation and calm reflection. We are certainly much inclined to his views, and are quite in accord with him in maintaining that the chief duty of the dental surgeon should be to preserve the dental tissues, rather than to inquire at how early a date his patient may need those artificial substitutes which at the best are but imitations of their natural predecessors. The work is well arranged and admirably illustrated.

THE *Leisure Hour*, the *Sunday at Home*, the *Girl's Own Paper* (Religious Tract Society), *Good Words*, the *Sunday Magazine* (Isbister and Co.), and *Friendly Greetings* are publications which, instructive in matter and wholesome in tone, are well deserving of the patronage they doubtless obtain. The first-named serial contains this month an article on "Healthy Dress," the remarks in which are, on the whole, judicious, and proceed on the lines we have repeatedly marked out. Whether the advice given therein will be followed to any great extent by those to whom it is addressed is questionable. Hygeia is tolerated only when she waits upon Fashion, the prime goddess of the "civilised" world.

THE DISEASES OF JAPAN.

DR. D. B. SIMMONS, director and chief medical officer to the Government Hospital at Yokohama, who has practised in Japan for nearly thirty years, has contributed to the *New York Medical Record* an interesting account of the prevalent diseases of the country. Infantile mortality is very high. Infantile cholera and diarrhœa cause a large number of deaths, but a still larger number is due to convulsions, the prevalence of which is attributed to the custom of shaving the heads of children during the first year, when they are exposed to the heat of the sun by being carried, without any covering, on the back of the mother or nurse. The shaved head is similarly exposed to the cold of winter, and consequently catarrhal diseases of the respiratory organs also cause a considerable mortality. Inherited syphilis is also frequently fatal. The milk of animals is never given to children; thus the infants fare badly if the mother's supply is, from any cause, deficient in quality, being fed upon malt water or rice water, and hence, in part, the high infantile mortality. Of epidemic diseases, scarlatina seems to be still unknown in Japan, except in the doubtful instance of a series of cases recorded by one practitioner. Epidemic cerebro-spinal meningitis has also not been met with. Diphtheria occurs in a sporadic form, and membranous croup is common, but neither has yet been observed to be distinctly epidemic. The history of measles is very remarkable. It appears in tremendous outbreaks, at long intervals of time, during which the disease is entirely absent. The epidemics are usually the result of importation, and affect all those who were not protected by the previous outbreak. The last epidemic was in 1861, the previous one having been twenty-seven years before. It spread in a few weeks from one end of the country to the other, all persons under twenty-seven being affected, or about 15,000,000 of persons out of a population of 35,000,000. The mortality was very great. In Yeddo, with a population of 1,500,000 persons, the deaths numbered 75,000. The public records of Japan have enabled Dr. Simmons to trace all the epidemics of measles in Japan since the year 552. He finds that they are thirty-seven in number. The longest interval has been a hundred and fifty-two years, the shortest eleven years. Since 1861 not a single case has been met with. Doubtless in every epidemic the whole of the available soil for the disease is exhausted, and the disease consequently disappears completely until fresh fuel has accumulated for a new accidental spark to fire. The isolation of Japan by a considerable tract of sea probably tends to render the advent of the contagion of such a disease rare. Hence there seems no reason why measles should ever be constantly present in Japan as it is in less isolated countries. German measles, on the other hand, is everywhere and always common, and occasionally occurs in slight epidemics. Whooping-cough—the hundred-day cough, as the Japanese term it—and mumps are both frequent, and present their familiar characteristics. Small-pox is common, but less frequent since the introduction of vaccination in 1849. Typhoid fever is common, but its actual prevalence is difficult to ascertain, since the native doctors do not distinguish from it the indigenous malarial fevers. Dysentery is rare, but occasionally occurs in an epidemic form. Cholera was epidemic in 1861–62 and in 1877–78–79. In 1879 there occurred 164,264 cases, with 97,422 deaths, about 59 per cent. Intermittent malarial fevers and beri-beri are very common, while phthisis is the cause of a larger number of adult deaths than any other disease. Leprosy is widely spread, but is believed to be held in check by the popular recognition of its hereditary character. Marriages are avoided in families in which there is any trace of the affection. Three parts of the adult urban population are believed to be syphilitic, but the manifestations of the disease seem to be less grave than in Europeans—a fact which Dr. Simmons is inclined to attribute to the saturation of the race with the poison for generations; this saturation also, he thinks, may explain the physical inferiority of the race as compared with Europeans, and its very slight increase in numbers during the last two centuries.

THE LANCET.

LONDON: SATURDAY, JULY 9, 1881.

NOTWITHSTANDING our belief that both the Government and the Royal Commission are in earnest to make a creditable and complete business of the amendment of the Medical Acts, we should be much less sanguine than we are but for our further belief in the practical agreement of medical reformers as to the essential and indispensable points of medical reform. A belief in the sacredness of corporations is still cherished even in this irreverent age. They may have outlived their *raison d'être*, and all the conditions under which they were instituted; they may be actually hindering the cause of public and professional progress, and their continuance may only be possible by a tax on the profession, and yet the legal sentiment against disfranchisement is strong. Corporations and their privileges are regarded with more reverence than even churches. Add to this the fact of their cohesion—their tendency to pull together when any feeling of common danger takes possession of them, and we soon see how secure they may be if reformers do not also pull together and agree in their demands.

The question of Medical Reform has three great parts, affecting respectively—

I. The Medical Council.
II. The Licensing Boards.
III. The Privileges of Registered Medical Men.

Under each of these heads a great diversity of opinion amongst reformers might very reasonably be allowed. But in proportion to the degree in which we can reduce this diversity to a minimum will be the success of our efforts. Take, for example, the question of the representation of the profession on the Medical Council of the future. One person may think that it would be enough to alter the constitution of the various bodies so as to make the election of their representatives the act of all the members or licentiates, instead, as at present, of their respective councils. Another would be content to leave the nomination of persons to represent the profession, as distinguished from its corporations, to the Crown. A third thinks that nothing but direct representation—election by a direct vote of every registered practitioner, apart from his relation to any particular medical corporation—will suffice. These are three perfectly tenable proposals, the acceptance of any one of which by the Commission and the Legislature would be a great reform. But we are clear, notwithstanding, that it is very desirable the demand of reformers should be for one of these proposals—viz., for direct representation; and that for several reasons. We shall only specify two reasons. First, we want to get the profession out of the ruts of the corporations, and to infuse a little more independence into the Medical Council than exists in any corporation. Secondly, we think it scarcely admits of doubt that the direct mode of representing the profession is the one most favoured by the great bulk of practitioners, upon which there is a greater consensus of opinion than there is on any alternative proposal.

As to the *functions* of the future Council, which we take to be a question of equal importance in medical reform with the question of the constitution of the Council, there is not room for difference of opinion. It must not be the shilly-shally, timid, recommending body which the present Council is. It must be a body so composed as to be able to formulate a wise judgment, and, having done so, it must have the power to enforce its judgment. In other words, its resolutions must become Regulations, binding, as regards the minimum qualification, on the licensing boards of the future. The absence of authority in the present Council has had as much to do with its uselessness as the absence of sympathy with the profession.

As to the *Licensing Boards of the future* the view of reformers is clear enough, that they shall be reduced in number; that if not directly elected by the Medical Council, they shall be closely supervised by it, and subject to its authority in regard to questions of curriculum, and the order and subjects of examination; and, finally, that if the licensing boards are not to be entirely divorced from corporation and pecuniary interests, these interests shall be so reduced in number, and so equalised in each division of the kingdom, as to raise the Boards above the risk of suspicion and of disparagement. The idea of transmitting all the nineteen bodies into future generations under Conjoint Schemes ought to be stoutly opposed as unjust to the profession, and inconsistent with efficient reform.

Finally, *as regards the Privileges of registered practitioners*, there is little room for difference of opinion among practical men. When the State is devising means for increased stringency in the examinations necessary to secure the right to registration, it is only reasonable that it should devise more stringent means for punishing false pretences to registration, and false representations as to the nature of titles and qualifications. We may all agree with Sir BENJAMIN BRODIE, in his evidence before the Select Committee of 1847, that there will ever be a tendency in mankind to employ quacks, and that all means to prevent them doing so will be ineffectual. But this is no reason for allowing quacks to deceive the public by false pretences. Where a person prefers the quack to the regular practitioner that is the concern only of the person himself, but the State owes it to its citizens to make clear the distinction of qualified and unqualified persons, and by more severe penalties than exist at present to discourage the false assumption of professional position and titles. This is due equally to the public and to the practitioner of medicine, who in the interest of the public is subjected to tests of competency, ever increasing in number and severity.

NO psychologist has hitherto been able, and probably it is impossible, to define *madness*, or to give a clearly marked indication of the boundary line between sanity and insanity. Mental soundness is merged in unsoundness by degrees of decadence which are so small as to be practically inappreciable. It is with the mind-state which precedes the development of a recognised form of insanity the therapeutist and the social philosopher are chiefly interested. Although in individual cases the subject of mental derange-

ment may, as the phrase runs, "go mad" suddenly, speaking generally, insanity is a symptom occurring in the course of disease, and, commonly, not until the malady of which it is the expression has made some progress. Those mental disturbances which consist in a temporary aberration of brain-function, and which are the accidents of instability, rather than the effects of developed or even developing neuroses, can scarcely be classed as insanity; although it is true, and in an important sense, that these passing storms of excitement or spells of moody depression may—acting reflexly on the cerebral and nervous centres, as all mind-states and mind-movements react—exert a morbific influence and lay the physical bases of mental disease. The consideration most practical to the community and germane to the question of public safety is, that in any and every population there must exist a dangerously large proportion of persons who are always in a condition of mind to be injuriously influenced by any force which powerfully affects them. As a matter of history, it would seem that the majority of such persons are controlled rather than morbidly excited by the opportunity of throwing themselves into any popular movement. They may suffer afterwards for the stimulation they receive at the time of public commotions, but while these are in progress they link their own consciousness with that of other minds, and the tendency to develop individual eccentricities of mental action is thereby for the moment repressed or exhausted. It is in the intervals of great public excitement the peace is disturbed by the vagaries of criminals who are more or less reasonably suspected of being "insane."

It would be premature to assume that the murderer of Mr. GOLD, or the man who attempted to assassinate the President of the United States of America, were insane. There are circumstances in connexion with each of these tragedies which must suggest the reflection that the assailants were possibly, or even probably, of unsound mind. We do not, however, propose to discuss these features of the respective cases at this juncture. The full facts are not, as yet, ascertained; but enough is known to warrant an endeavour to clear the way for future remark by disposing of the objection that the suspected perpetrator of the Brighton outrage and the would-be assassin of the President both showed "forethought" and "method." It is a common formula for the expression of doubt as to the irresponsibility of an alleged lunatic, that there is "method in his madness." Nothing can be farther from the truth than the inference to which this observation is intended to point. It is not in the least degree necessary that a madman should be unconscious of the act he performs, or of its nature as a violation of the law of GOD or man; nor is it necessary that he should do the deed under an ungovernable impulse, or at the supposed bidding of GOD or Devil, angel or fiend. The forms of mental disease to which these presumptions apply are coarse developments of insanity. Dr. PRICHARD was among the first of English medico-psychologists to recognise the existence of a more subtle form of disease, which he termed "moral insanity." HERBERT SPENCER supplied the key-note to this mystery of madness when he propounded the doctrine of "dissolution;" and Dr. HUGHLINGS JACKSON has since applied that hypothesis to the elucidation of morbid mental states and their correlated phenomena. When disorganising—or, if we may borrow an expression from the terminology of geological science, *denuding*—disease attacks the mental organism, it, so to say, strips off, layer by layer, the successive strata of "habit," "principle," and "nature," which compose the character. First in order go the higher moral qualities of the mind, next those which are the result of personally formed habits, then the inherited principles of personal and social life. At length the polish which civilisation gives to humanity is lost, and in the process of denudation the evolutionary elements of man's nature are progressively destroyed, until he is reduced to the level of a creature inspired by purely animal passions, and obeying the lower brutish instincts. The term "moral insanity" is accurate as far as it goes, but it expresses only the first stage in a process of dissolution which is essentially the same throughout, but which has unfortunately received different designations as its several features have been recognised and studied apart. The difference between the subject of "moral insanity" and the general paralytic, who has lost all sense of decency and lives the life of a beast, is one of degree. The practical difficulty is to convince the mere observer that forms of insanity which seem to consist in the loss of moral qualities and principles *only*, may be as directly the effect of brain disease as any of those grosser varieties of mental disorder which he is perfectly well able to recognise, and fully prepared to ascribe to their proper cause.

To the professional mind, at least, it will follow from what we have said that the injury to mind properties or qualities inflicted by the invasion of disease may be partial, and must in every case be determined by laws or conditions governing the progress of disease, perhaps on the lines and in the directions which have been least well guarded by educationary influences. A man may lose his faculty of forming a wise judgment long before he is deprived of the power of distinguishing between right and wrong. This is so because it is a higher attainment in moral culture to do right advisedly, than simply to perceive the right thing to do. The application of principle to conduct is an advance on the mere recognition of virtue in the concrete, or even the possession of virtue in the abstract. The question whether any past act of wrongdoing was an act of insanity does not so much depend upon the great question whether the person doing it was insane as a whole being, as whether the deed done was the outcome of passion or error, the direct fruit of limited or special disease. In short, the insanity of the act must be inferred from the morbid condition of the brain from which it sprang, rather than from the act itself. A partially disorganised—or as we prefer to say "denuded"—brain may be fully capable of sane thought, except on some one topic, and able to exercise every intellectual function except of a particular order. Or there may be mental weakness and neurotic susceptibility in regard to a special class of impressions. It would be difficult to name any form of act or submission which may not be the outcome of incipient or limited disease. The practical difficulty is to avoid, on the one hand, treating the fruits of disease as wilful offences; while, on the other, we do not allow the supposition or presumption of disease to be employed as an excuse for wrongdoing. It is, of course, clear that there may be perfect method in such madness as springs from partial or commencing brain disease; for every element in the mental

process which culminates in a mad act may be sane except the inception of the idea in which the act took its rise. Thus, in the case of the suspected murderer of Mr. GOLD, there may have been perfect sanity in respect to every stage of the process by which the crime was planned and carried out, and yet insanity, the effect of brain disease, in the idea by which the deed was suggested. For example, when a man is suffering from morbid suspicion, and, fixing his distrust on some individual, purposes to murder him, the intellectual processes by which he lays his plans, and fulfils his morbidly conceived intention, are performed with perfect sanity, as by a sane will. It is important to recognise this. There is no difference in *nature* between the mental operation by which a "sane" man contrives and executes a crime, and that by which a known "lunatic" will commit the like offence. There may be as much *method* in the one instance as in the other, and the faculties which exhibit this method may be as sound and effective, but in the one case the idea behind the act is sane, while in the other it is insane. The brain is not one large homogeneous organ to be healthy or diseased, orderly or deranged, throughout at any one period. Inflammations, and diseases generally, which affect the brain as a whole do not commonly cause insanity properly so called. The organ of the mind is a composite, or aggregate of cells, or molecules, any number or series of which may be affected with disease while the rest remain healthy. At present we are only on the threshold of investigation concerning the physical causes of insanity, and have scarcely done more than recognise the possibility of *molecular* disease of the brain. Hereafter Science will, probably, succeed in unveiling the obscure facts of molecular brain pathology, and enable the medical psychologist to predicate disease of recognised classes of brain elements from the special phenomena of mind disturbance. This is the line of inquiry, and the result, to which the progress already made distinctly tends. For the present, the inferences we can surely draw from known facts are very few; but prominent among the number are certain which it is all-important to recognise in view of the judgment which must hereafter be formed on the two cases now engaging public attention on both sides of the Atlantic. The existence of method in madness is no marvel, and that characteristic cannot therefore be supposed, or alleged, to weigh as evidence against the "insanity" of the criminal. The perpetrators of these heinous offences against common right and public safety may be more or less responsible for their acts, and, so far as these are concerned, more or less sane or insane. The measure of the morbid element in their individual cases will be the health or disease of the particular part or element of the brain from which the offence sprang. The ultimate judgment formed must be determined upon the basis of scientific tests to be applied to the action of the brain alleged to be the subject of partial or incipient disease. There is nothing in the facts as they stand to supply the materials for a judgment. Precise scientific inquiry can alone solve the enigma each case presents.

THE Johns Hopkins University Circular for April, 1881, contains a paper by H. NEWELL MARTIN and W. T. SEDGWICK on the Blood-pressure in the Coronary Arteries of the Heart. In this it is stated that the anatomist THEBESIUS, in the early part of the last century, propounded the theory that the flaps of the aorta and pulmonary valves are pressed against the wall of the vessel during the systole of the heart, and occlude the mouths of the coronary arteries which lie behind them. This vi fell into oblivion until it was revived and powerfully su ported in recent times by BRUECKE. The reasoning of BRUECKE was largely teleological, and to the effect that since the heart is a hollow structure, which diminishes its bulk, and, so far as the ventricles are concerned, obliterates its cavity in contraction and forcible injection of the cardiac arteries with blood during the systole of the organ, diastole would tend to make its walls tense and oppose the contraction; whilst, if the coronary arteries received no blood during the ventricular systole, but were filled during the diastole, the contraction of the heart would not be impeded, and its subsequent dilatation would be promoted. Arguing from the general mechanical perfection found in the mammalian body, he concluded it was probable that the view of THEBESIUS was correct, and that the semilunar flaps were really so placed during the ventricular systole as to prevent blood from entering the proper cardiac arteries, whilst in diastole the organ had its walls tensely filled with blood, and its cavities consequently expanded. Much difference of opinion has existed upon the subject, the result being a general belief that the question could only be definitely settled by an observation of arterial pressure in the coronary vessels. If the coronary pulse coincided with that in other arteries, BRUECKE would be wrong; if it alternated with it, he would be right. The difficulty of introducing a cannula into the arteries of a living and beating heart seems hitherto to have foiled physiological experimenters, and Drs. MARTIN and SEDGWICK undertook the task, without any very great hopes of success. Their experiments were made upon dogs placed under the influence of morphia, and after several failures they succeeded in getting on seven or eight animals simultaneous graphic records of mean arterial pressure and pulse beats in the carotid and coronary arteries. The results of a careful examination of these are: (1) The blood-pressure in the coronary arteries is comparatively very great, being in a small branch very little less than equal to or greater than that in the carotid trunk. (2) The coronary and carotid pulses are practically synchronous in time; there is no trace whatever of an alternation in them. This holds true whether the arterial pressure be high or low, or the heart's rhythm slow or quick; and even the minutest feature of the graphic record in the tracing of blood-pressure in the carotid is simultaneously and perfectly repeated in that obtained from the coronary artery. Whether the heart's beat be slowed by stimulation of the cardio-inhibitory nerves, or arterial pressure be greatly raised by inducing dyspnœa, the general and sphygmic variations of pressure in the two arteries are perfectly synchronous and similar in form: the record traced from each artery is in its variations an exact duplicate of that obtained from the other. The results of these experiments prove that for the dog the THEBESIUS-BRUECKE view (with a predilection in whose favour Professors MARTIN and SEDGWICK started) is untenable; for although the ventricular systole might be conceived to raise pressure in the coronary artery, it is inconceivable

that every minute character of the carotid tracing should be synchronously and perfectly reproduced in that from the coronary artery unless both were due to the same immediate cause—viz., the elevation of arterial pressure in the aorta by the systole of the left ventricle. The mouths of the coronary arteries are therefore not closed by the flaps of the semilunar valve during ventricular systole.

THE lamentable loss of life among the troops at the sham fight at Aldershot on Monday last suggests some very serious considerations as to the manner in which such affairs are arranged and carried out by the authorities at the Horse Guards. Admitting that some valuable practical lessons may be learned at these manœuvres—though even that result may be questioned—it may be fairly asked whether the selection for such a purpose of the hottest month in the year betokens proper regard on the part of the authorities for the welfare of the troops. It may possibly be more convenient to get the work over before the period when town is empty, and when the officers are all anxious to be off to the moors and to practise their shooting on grouse or partridges; but, if this is to be a sufficient reason for not having the manœuvres later in the autumn, could they not be carried out before the period of excessive heat arrives? Again, if they are to take place in July, why not arrange to have the men more suitably clothed for such work? The dark-coloured helmet especially ought to be either replaced in summer by a white one, or at least a white cover might be issued as a simple means of protection from the sun. Why, indeed, should not the troops always wear a white cover during the summer months? The result of the exposure on Monday last during the heat of the day in most unsuitable clothing, and with black helmets, was the death of at least four men and the serious illness from insolation of between forty and fifty more. Although in England the duration of excessive heat is not usually long, it surely is not too much to expect of the authorities at the Horse Guards that they should take special care at such seasons that the soldiers are not unnecessarily exposed to the solar heat, that drills and parades are confined to the cool hours of the morning, and that such modifications in the dress, and especially the head dress, are made as will, in the opinion of the medical officers, be likely to save the men from the serious consequences arising from injudicious exposure. We trust that a thorough investigation will take place as to the arrangements, military and medical, which were made on this occasion, and that out of the evil may arise such regulations on the subject as will prevent in future so unnecessary a sacrifice of life and health. These events, however, have an immediate and important bearing on the subject of the review which is to take place on this Saturday of some fifty or sixty thousand volunteers, collected from all parts of the kingdom. A very serious responsibility will rest with the military authorities unless some steps are taken to protect the men from those preventable causes of illness and death which the events at Aldershot have shown to be too likely to be brought into operation, unless the affair is conducted with judgment. Among the chief points deserving attention are the avoidance of keeping the men an unnecessary time under arms; the necessity for placing them under shelter from the sun's rays until the time arrives for them to fall in; an order to wear puggeries, or some white cover over their helmets or shakos; the arrangements for the issue of food to the men; and an abundant supply of water and other non-stimulating drinks. We understand that a bearer company of the Army Hospital Corps is to be sent to the review, and we trust that it will be found equal to the duties required of it, and that there will be no lack of ice should any cases of heat apoplexy occur. It is to be hoped also that, in the arrangements with the railway companies, provision will be made to ensure a good supply of cold drinking water at such stations as the trains are to call at. This will save a great deal of unnecessary suffering, attended possibly with serious results.

Annotations.

"Ne quid nimis."

COLLEGE ELECTIONS.

THE election of Members of the Council of the Royal College of Surgeons of England took place on Thursday last. The following is the result:—

PAGET	228,	including	1 plumper.
HULKE	137	,,	8 plumpers.
HEATH	133	,,	5 ,,
Croft	113	,,	18 ,,
Harrison	87	,,	12 ,,
Walton	72	,,	5 ,,

Sir James Paget was therefore re-elected, and Mr. Hulke and Mr. Heath were elected members of the Council. The number of Fellows who voted was 313.

THE ATTEMPTED ASSASSINATION OF PRESIDENT GARFIELD.

ABOUT half-past nine in the morning of the 2nd instant, when about to start from the Baltimore and Potomac Railway Station at Washington for New York, President Garfield was shot by a would-be assassin. Two wounds were inflicted, one on the right shoulder, the other in the back. The bullet in the last-mentioned wound entered between the tenth and eleventh ribs on the right side of the vertebral column, and is believed to have passed downwards and forwards through the lower portion of the right lobe of the liver, lodging, probably, in the anterior walls of the abdomen. The pulse at once fell to 52, the surface assumed an ashy leaden hue, and there were all the indications of rapidly impending death from collapse; later on reaction set in, with a quick pulse, high temperature, little external bleeding, but symptoms pointing to the existence of internal hæmorrhage. A few hours later the condition of matters mended, and the latest news to hand, at the time we write, reports considerable progress, the pulse having fallen to 98 or 96; the temperature being normal, the respirations not exceeding 23 in the minute, and the general condition being good. The patient is said to take chicken broth and milk with lime water freely, and to suffer little, except from pains referred to the foot, the nerves supplying the lower extremities having sustained some injury. It is not deemed expedient to search for the bullet at present. The external wound remains open, and is dressed antiseptically. Little importance is attached to the immediate lesions caused by the bullet on entering, or in its passage. There are as yet no symptoms of extended peritonitis, the pain and tenderness being restricted to a small area. The tympanites which occurred early in the case has subsided, nausea and

vomiting have ceased, and the bowels have acted normally. Hypodermic injections of morphia and opiates have been discontinued; the patient sleeps naturally and is hopeful. Altogether, the accounts received, which are full, though necessarily as yet disconnected and somewhat contradictory, must be regarded as satisfactory, and giving reasonable ground for hope that the malevolent intention of the would-be assassin may be frustrated. There are, of course, many perils still to be encountered. Secondary internal hæmorrhage may occur when the bullet is accidentally or surgically displaced, either extensive inflammation or blood-poisoning is possible; but looking at the case as a whole, and recalling the history of similar cases, it is impossible not to feel that fairly good hope is permissible. It is as yet impossible to obtain a detailed account of the case from medical sources, and nothing could be gained by summarising the telegraphic reports. We can, therefore, only base our notion of the condition of the patient and the probability of his recovery on general information. Such data as are at our disposal seem to justify an encouraging view, and with the reserve indispensable in dealing with a case of this character and importance, this view may be maintained. It may be assumed from the surgical history up to this point that the course taken by the bullet must have been such as to avoid injury, to the most important structures. It is scarcely possible that any of the large vessels can have been injured and the hypothesis of complete severance, or even a severe injury, of the great nerves, is not necessary to account for the pains in the lower extremity. The liver, if wounded, can hardly have been extensively lacerated; the kidney, bladder, and intestines must also have escaped. If, therefore, President Garfield should survive the perils of the next few days, and the bullet can be extracted, there will be no medical reasons—at least, arising out of the general character of the injuries he has received—why he should not do well.

BRAIN LESIONS IN ACUTE DISEASE.

PATHOLOGISTS have sought to discover by microscopical examination of the brain after death some indications of the morbid processes which, during life, give rise to some of the most striking symptoms of acute infectious diseases. Popoff described, a few years ago, in both typhoid and typhus fever, as almost constantly present, microscopical lesions in the cortex of the brain. The layer of pyramidal cells presents an infiltration, around the vessels, of small round corpuscles, which even penetrate to the interior of the nerve-cells, and cause active changes in them, shown by multiplication of the nucleus. Soon after the publication of Popoff's observations these changes were the subject of a communication by Duke Charles of Bavaria, who denied the characteristic nature of the perivascular infiltration, asserting that it was to be found in normal brains; he failed to find any penetration of the round cells into the interior of the nerve elements. The same opinion has been also recently expressed by Blaschko as the result of an examination of the brain in typhoid fever, and in septicæmia, spontaneous and induced. He believes that the cerebral symptoms in these diseases are due, as is commonly taught, to the change in the blood, and not to any secondary vascular changes. The latest contribution to the subject is by Dr. A. Rosenthal of Warsaw, who has examined more than thirty brains from cases of various infectious diseases: typhoid and relapsing fever, septicæmia, puerperal fever, and scarlet fever. He has also examined, for the sake of comparison, an equal number of brains from patients dying of other non-infectious diseases. In every case the same part of the convolutions was examined—viz., portions from the ascending frontal and ascending parietal convolutions. In the intima of the vessels there was not rarely a deposit of fatty and pigment granules, and swelling of the cells of the endothelium. Around the vessels, in some cases of typhoid fever and septicæmia, were irregular, refracting, yellowish, or clear (colloid?) globules. Infiltration of round cells about the vessels and in the neuroglia was found in most (though not in all) of the cases of infectious disease, but it was found also in many of the cases of non-infectious disease; hence little weight can be attached to it. Rosenthal also fails to corroborate the statement of Popoff, that the round corpuscles penetrate the nerve-cells, and cause formative changes in them. But he describes other morbid appearances in these cells: cloudy swelling of the protoplasm, atrophy of the processes, and alteration in the form of the cells, so that they become rounder and less uniform in shape. In the deeper layers the changes are greater; there is actual fatty degeneration of the protoplasm of the ganglion cells, which may proceed so far that an enlarged nucleus lies in a spherical cavity surrounded by an irregular mass of granules, representing the protoplasm. In one very severe case of typhoid he found the ganglion cells very much smaller than normal, and lying two together in cavities, as if they had undergone proliferation. In the medulla oblongata changes were constantly present. The cells of the several nuclei appeared round or oval, instead of presenting their multipolar form; the protoplasm was cloudy, the nuclei were invisible, and the processes short or absent. The changes were most intense in the vagus nucleus. These changes, in Rosenthal's opinion, indicate that the brain elements suffer in their parenchyma, just as do the tissues of other organs in infectious diseases. It is possible, however, that some of these morbid appearances are due to post-mortem changes, or are the effect of the hardening agents employed. Such observations on parenchymatous changes lose much of their value unless the appearances of the tissues in fresh teased-out specimens are also ascertained, a precaution which does not seem to have been observed.

THE SEASON OF THIRST.

THE weather is warm enough to give some foretaste of the season of thirst, which, happily, in this country, is not also a season of drought. Indeed, the beverages placed at the public disposal are as numerous as the most capricious and versatile requirement for "drinks" can demand. The difficulty is not so much what to take as what to avoid. It is obviously a mischievous and dangerous habit to employ fermented liquors to allay thirst. Stimulants are good and useful in their place, but they are wholly misapplied when used as ordinary drinks. Medicated or naturally medicinal waters and beverages ought certainly to be avoided as mere thirst-quenchers, however useful they may be as agreeable vehicles for the administration of small doses of medicine in disguise. Warm and simply nourishing drinks, such as cocoa, chocolate, milk with or without water, and weak tea, which are probably the least harmful liquids to consume, as they determine to the skin not less than to the kidneys, are generally distasteful in warm weather. It is probably, therefore, necessary to resort to cold and even iced drinks; but the recourse is not to be commended. That there are conditions of the stomach in which the application of ice to the mucous membrane may be indicated is, of course, recognised; but it is scarcely desirable to depress the temperature of any part of the organism suddenly and severely for the mere sake of a momentary sensation of pleasure. There are risks attendant on the consumption of ices when the body is much heated, which cannot be comprehended under the term "cold," or be gauged by their immediate consequences. The loss of fluid by perspiration must be compensated, but beyond this it is well not to drink excessively. The perpetual imbibition of liquids increases or maintains the sense of need it is desired to satisfy. The organism rapidly adapts itself to the circumstances and requirements of the moment. If it is thrown into a perspira-

tion, the skin being set to eliminate fluid, the action will be continued, and the demand for fluid will be perpetuated, not only to replace what has been secreted by the sweat-glands and cast off, but to provide further work for the skin! In short, the perspiration, caused by an excessive consumption of fluids in warm weather, sets up a drain which is unnatural, inasmuch as it outruns the necessity of affording relief for the augmented blood-pressure in the superficial vessels in which an outbreak of perspiration originates. A man may drink and perspire indefinitely. It is better to put some restraint on the inclination to imbibe inordinate quantities of fluid. If any enterprising caterer should be able to devise an agreeable drink which is neither too stimulating nor medicated with salines, ferruginous compounds, or phosphates, but simply nourishing, like barley-water, he will confer a public benefit and command support.

OMNIBUSES AS DISTRIBUTORS OF DISEASES.

THERE can be little doubt that the ordinary omnibus plays a considerable part in the spread of diseases, not alone of the maladies popularly recognised as "catching," but of those nameless illnesses which constitute the bulk of personal and family sickness. Within a compartment measuring less in capacity than would be allowed per head for the inmates of the worst arranged of hospitals, say barely over 300 cubic feet, without any through ventilation in the direction in which the vehicle travels, are crowded some dozen persons, who respire each other's carbonised and often fetid breath, to a degree and with a directness not experienced under any other circumstances. How real the evil is may be inferred from the indications given when a particularly unhealthy or uncleanly person enters the conveyance. It is impossible that diseases should not be distributed in this way. Those who have occasion to travel frequently in omnibuses, and who are, so to say, acclimatised, may not notice the nuisance of foul air or the injurious emanations by which these vehicles are infected; but they exist, and produce their full crop of consequences. Some years ago complaints were rife as to the ventilation of omnibuses, and while the windows were fixed ventilators were provided in the front under the driver's seat and in the roof. These contrivances do not and cannot remove the annoyance and danger to which we allude, and which inevitably result from placing persons face to face in a narrow vehicle. It would probably necessitate an increase of something like fifteen inches or two feet to the outside measurement of the ordinary omnibus if it were constructed so that the passengers sat back to back, but the gain in comfort and indirectly in health would be very great. Until some change of this nature is made the delicate or susceptible should avoid these conveyances, which, in a peculiar sense, are distributors of diseases.

THE BRITISH MEDICAL BENEVOLENT FUND.

WE have read with great pleasure the Annual Report of the Committee of the British Medical Benevolent Fund for the year 1880. This fund is administered gratuitously by careful and benevolent members of the fund, who, however, must feel considerably rewarded in the consciousness of having done so much really good work. Another satisfactory feature of the fund is that applicants for relief are put to little or no expense. There is no canvassing, and no harrowing exposure of domestic and personal destitution. The subscriptions and donations together amounted to £1800 for 1880, nearly the whole of which has been expended in grants. While we trust that the Committee will continue to use its best efforts to give a provident and insuring character to this fund, we think it one most deserving of the further and generous support of the profession and of the public.

THE PRESIDENCY OF THE ROYAL COLLEGE OF SURGEONS.

THE annual election of members of the Council of the Royal College of Surgeons of England is, at length, accomplished, and public interest now centres in the election of President for the ensuing year. The important part the College will play during the meeting of the International Medical Congress next month demands, for the reasons we have previously advanced, a departure from the customary routine of electing the senior vice-president. The Council of the College has undertaken to give a conversazione to the members of the Congress, and a strong feeling prevails that the president on this important occasion should be a proper representative of English surgery. Most persons would, we believe, rejoice at the re-election of Mr. Erichsen as a graceful recognition of his distinguished merits as a surgeon. The sole difficulty in the way of the adoption of this course is the absence of a precedent. It is, however, a question whether the present is not a fitting opportunity for creating a precedent. Failing this, the only rational alternative would seem to be to elect Mr. Spencer Wells president, and Mr. John Marshall and Mr. Cooper Forster senior and junior vice-presidents, respectively. Mr. Spencer Wells's reputation as a surgeon and ovariotomist is quite as great in America and on the Continent as it is in England. It cannot, therefore, be doubted that his occupancy of the presidential chair of the Royal College of Surgeons during the meeting of the International Congress would be agreeable to surgeons of every nation, especially if he were supported by such excellent colleagues as Mr. John Marshall and Mr. Cooper Forster, both of whom are not only representatives of two of the largest schools in England, but known to be thoroughly conversant with all the workings of every department of the College. With Sir James Paget as President of the Congress, Mr. Erichsen President of the Surgical Section of the Congress, Mr. Spencer Wells President of the Royal College of Surgeons, and Mr. Marshall and Mr. Cooper Forster Vice-Presidents, English surgery and the College of Surgeons would both be becomingly represented at the Congress. This arrangement cannot, however, be effected without the sanction and approval of a majority of the members of the Council, with whom rest the ultimate choice and decision.

THE EXCITABILITY OF THE CORPUS CALLOSUM.

DR. BROWN-SÉQUARD, who pointed out, eighteen months ago, the fact that movements can be excited by stimulation of the corpus callosum, has lately recorded the results of new experiments bearing on the same point, made on dogs, cats, and monkeys. Having first ascertained that stimulation of the motor zone of the left hemisphere caused the ordinary movements in the limbs of the right side, he made a series of longitudinal sections in the left hemisphere through the fibres going from the motor region to the corpus callosum, and found that stimulation of the surface of these sections produced the same effects as stimulation of the surface of the hemisphere. The last section was through the corpus callosum itself. He then removed all the rest of the hemisphere, including the corpus striatum, optic thalamus, and internal capsule, and galvanised the surface of the section. When the stimulus was applied to the middle third of the exposed fibres of the corpus callosum, it produced precisely the same movements of the right limbs as had been caused by excitation of the motor zone of the left hemisphere. It seems, therefore, that excitable fibres coming from the motor convolutions of one hemisphere pass through the corpus callosum. The same fact is demonstrated also by the following experiments. The base of the brain is divided longitudinally from the

upper part of the cerebral peduncles to below the decussation of the pyramids in the medulla. In those animals which survive the operation long enough to allow the excitability of the motor zone to be tested, it is found that its stimulation still produces crossed movements, although the excitability is considerably reduced. If one crus cerebri or the half of the pons Varolii is divided, not only does galvanisation of the motor zone of the corresponding hemisphere still produce movements of the opposite side, but these are often more energetic and extensive. This fact, as well as the preceding, tends to show that the corpus callosum is one, though probably not the only, channel of communication between the motor zone of one side and the limbs of the opposite side.

MIDHAT PASHA.

THE fate of Midhat Pasha naturally interests the friends of progress and liberty in all countries. The mere fact that his accusation and condemnation have been ascribed to the intrigue of personal enemies and political opponents should suffice to prompt a voluntary revision of the sentence. The evidence pointing to the complicity of Midhat Pasha was so wanting in force and legal value that probably no other tribunal except a Turkish one could have been found to condemn him. In any event, decency should prevent the execution of the capital sentence pronounced. The whole affair was so hopelessly confused by the mismanagement of the medical inquiry, such as it was, which was held at the time of the alleged "suicide," that it is too late to take extreme vengeance on the criminals. Looking at the case from a medical standpoint, we confess that the conclusion now reached accords with the view we have taken throughout; but as regards the question of a personal allocation of the guilt, or vengeance on the offenders, we offer no opinion, except that, probably, the time has passed when justice could be done.

USELESS INQUESTS AND MEANINGLESS VERDICTS.

UNDER present circumstances the prospect of reform in the legislation affecting the appointment and duties of coroners seems but too remote. The necessity for such reform is, however, none the less pressing, and it is well not to lose sight of events which prove this necessity. It appears that in April last the Quartermaster-Sergeant of the 1st Somerset Militia was suddenly taken ill, and died the next day. An inquest was held within a few days of the death, and a medical witness gave evidence to the effect that he was unable to state the cause of death without a post-mortem examination of the body. Such examination appears to have been considered unnecessary by the coroner and jury, who returned the meaningless verdict of "death by the visitation of God." The family of the deceased, however, were not satisfied with the result of this inquiry, and caused a post-mortem examination to be held, the result of which was the discovery of arsenic. The Home Secretary, on a representation of the facts being made to him, decided that further inquiry concerning this death should be made, and to this end it was necessary that the first inquest should be quashed. To effect this a rule *nisi* was recently granted, calling on the coroner for Somerset to show cause why a *certiorari* should not issue to bring into court the inquisition taken by him in the case in question, in order that it might be quashed for the purpose of instituting a further inquiry. The object in this case will now doubtlessly be attained, and it may be hoped that the the second inquest will be more satisfactory than the first; but the case fitly illustrates the grave danger which besets the present action of so many coroners (many of them laymen) who presume to consider verdicts of "Visitation of God," "Natural Causes," or "Sudden Death," satisfactory verdicts, and, further, that medical evidence which would render possible an intelligible verdict is unnecessary. Such inquests as the one just quashed are not only useless, but are actively mischievous. Coroners should be authoritatively instructed that the primary object of an inquest is to ascertain the cause of death. This is not only necessary in the interest of society, but would add materially to the value of our national mortality statistics.

PROPHYLACTIC INOCULATION OF GERMS.

PROPHYLACTIC inoculation, which has been so carefully investigated in France, was the subject of communication by Grawitz to the recent Surgical Congress at Berlin, which dwelt also with the question of the transformation of innocent into deleterious organisms. Fungi which grow in bread, milk, &c., develop in an acid medium and at the ordinary temperature. Inoculated in an animal, they rapidly die, being in uncongenial conditions; but by successive systematic cultivation Grawitz has succeeded in acclimatising the fungi in a medium, such as the blood, of a decided alkaline reaction, and at a temperature of 37° C. They are found to have then become infectious germs, the degree of their deleterious action being proportioned to their power of adaptation to their new conditions of existence. Inoculating rabbits with the products of cultures more and more perfect, Grawitz has noted a progressive increase, not only in the intensity of the disorders thus produced, but also in the localisation of the local lesions. As soon as the spores are sufficiently adapted to the conditions of the blood, they become established in the kidneys and in the liver, accumulating in foci, and causing swelling of the organs and fatty degeneration of the cells. With still more highly developed products of culture, colonies of parasites are met with in the muscles, then in the intestines, in the spleen, and, finally, in the brain and lungs. Grawitz, like the French observers, has also found that the inoculation either of large doses of fungi of low "culture," or of smaller quantities of the organisms which have acquired more deleterious properties, will confer an immunity against future more virulent inoculations. Inoculation with uncultivated spores, not suited to the animal organism, confers no immunity. Grawitz attempts to explain these facts by the following theory. The organs are invaded by colonies of organisms, in the order of the functional activity of their cells, taking as the measure of that activity the consumption of oxygen in a given time. He speculates that the germs in contact with the anatomical elements of the organism attack first those which have the least vital power of resistance, and somewhat fancifully suggests that the tissue elements, if successful in the struggle, acquire an increased power of resistance, which they transmit to their successors.

To turn to a more practical aspect of the question, we note that MM. Arloing and Thomas, continuing their experiments on the inoculation of anthrax as a means of prophylaxis, have ascertained some remarkable facts regarding the differences in the action of the virus according to its mode of entrance into the system. If the inoculation is into a vein, slight general disturbance of the system is produced, which passes away in two or three days, after which the animals are protected against all future inoculations. The disease is an aborted anthrax, which does not go so far as to produce the local growths. If, however, a very large dose is injected, the complete disease follows, with the local tumours, which always result in death. The same difference is seen in the case of injections into the connective tissue. If the dose is very small, only an aborted attack occurs without local trouble. A medium dose causes moderate local disturbance, but one or two

distant tumours. If the dose is large a tumour forms first at the point of injection, and the general symptoms are severe. On the other hand, inoculation by the trachea or bronchi never causes any but the aborted form. Since immunity is always conferred, we cannot assume that in any inoculation the organisms perish in the blood; but in the slighter attacks, they must either quickly cease to multiply, or they must fail to pass out of the vessels into the connective tissue, where alone, it would seem, they find the conditions for their complete development. That the latter hypothesis is probably true is assumed from the fact that, during the course of a slight attack, a local wound will lead to the formation of a local tumour, as if it only needed a solution of continuity of the wall of the vessel for the organisms to produce their local effect. Two hundred and ninety-five oxen and cows have been inoculated by intravenous injection, and a report of their condition is to be furnished when the "epizootic" season is over.

THE HONORARY ELEMENT IN HOSPITAL ADMINISTRATION.

NOT without some offensive comments on the nature of the gratuitous services rendered by medical men to hospitals, a writer (Mr. Burford Rawlings) in the current number of *Fraser's Magazine*, in an article entitled "The Honorary Element in Hospital Administration," advocates the abolition of "honorarism" in connexion with medical charities, both as regards the lay and medical authorities. Patients are to be made to contribute according to their means, and the lay and the medical men engaged in the administration are to be reasonably remunerated for their time and skill. "The position of medical men," it is said, "in regard to the hospital has no parallel. In all other affairs of life we acknowledge the propriety of paying for work done. A Cabinet Minister does not forego his salary; the judges of the land receive high emoluments; bishops and priests take their various stipends; lawyers look for their fees, whatever the nature of the case; the Charity Commissioners themselves receive substantial payment; and it is only vulgar insolence which would suggest that duty, cause, or client is less carefully served because the service is not unrecompensed." In answer to the objection that the neediness of the hospitals must prevent any increase of expenditure, it is stated that the payment of the medical officers would be but one part of the reform, and that a thorough revisal of the system would relieve hospitals of much work which now adds to their expenses without enhancing their utility. Hospitals, therefore, should "limit their operations (1) to the treatment of *serious* disease among the poor of all classes, and (2) to the ailments of that intermediate body between the pauper and the humbly prosperous which, when allowed to contribute, would furnish the most legitimate dependents of our hospitals."

A REFINEMENT OF POLICE CRUELTY.

SOME of the police stations in and around London are now provided with ambulance trucks on two wheels for the conveyance of real or supposed drunkards to the station. It may surprise the inventors and introducers of these appliances to know that they may be, and are, converted into the most mischievous and cruel of instruments for the torture of the drunk or dying. The victim of disease or drink is strapped to the bed of the truck and then propelled, with his head considerably lower than his feet, to his destination! The policeman, lifts the handle of the truck and pushes it pleasantly before him. We will hope he does not know that by turning a man who is either under the influence of drink or has his brain congested by disease, nearly upside down, he is simply multiplying the probabilities of death. This is a matter of "urgency," and we commend it at once to the notice of the authorities. One of the alleged advantages of the truck or cart over the old-fashioned stretcher is the fact that fewer than four men are required to carry an incapable to the station; though it takes more men to place a helpless body on a truck than it did to roll one on to a stretcher laid on the ground—but the advantage is not evident when three spare men walk by the truck, and not one of them has the wit to suggest that the handle should be kept so low that the head of the insensible victim should at least be on a level with his heels.

THE CONTAGIOUS DISEASES ACTS.

WE have been gratified to find in one of our religious periodicals, "The Church of England Pulpit and Ecclesiastical Review," an ably written and temperate article on the Contagious Diseases Acts. It appears to have been elicited by the meeting to which we recently called attention "for the abolition of the Government regulation of vice." It shows clearly that no such "regulation" exists in this country; that the objects of the Acts are to prevent, as far as can be done by legislation, the spread of a most fearful disease, which not only affects the guilty persons contracting it, but is transmitted to their innocent off-spring. It in fact restricts and discourages prostitution. The interference by means of these Acts with the liberty of the subject is only such as may be fully justified in the interests of public health, and is not greater than is enforced every day in the cases of dangerous trades. If the principle be acknowledged that the interests of the great mass of the people ought to be protected, even at the cost of inconvenience to the few who for selfish motives carry on dangerous trades and health-destroying occupations, then there cannot be a question that the Contagious Diseases Acts are justifiable; nay more, that the efficient enforcement of them is a bounden duty on the part of the Government of this country. They have hitherto been condemned in unmeasured terms by a section of the clergy, and we are glad to find that some of that body are prepared to defend them from a conviction that they are beneficial to the people, and are not either "unjust, immoral, or unscriptural in their provisions."

THE POOR-LAW SERVICE IN IRELAND.

THE Dungannon Board of Guardians, in lately noticing the facts concerning a fever-stricken family in Coalisland, made special mention of the kindness of their medical officer, Mr. William Leatham, to the family in question. One act in particular is more creditable to Mr. Leatham than either to the neighbours or the Poor-law Service. He had to carry the fever-stricken family on his back to the fever cart. The necessity for work of this sort, though only a specimen of what medical men have to do, and do cheerfully, is not fair to them. The ambulance arrangements of the Poor-law system should be so organised as to obviate such demand either on neighbours or on the much-enduring doctor.

THE COST OF HOSPITAL PATIENTS.

MR. CHARLES HAWKINS writes an interesting letter to the *Daily News* on the cost of hospital patients in St. George's Hospital in 1830 and 1880 respectively. The cost is in favour of the year 1880, being less than in 1830 by 1*s.* 1*d.* The differences in some of the items are striking. Bread and flour per patient in 1830 cost 10*s.* 7*d.*; in 1880, 4*s.* 1*d.* Tea and groceries cost in 1830, 5*s.* 10*d.*; in 1880, 3*s.* 4*d.* Coals and wood in 1830, 10*s.* 6*d.*; in 1880, 3*s.* 10*d.* Drugs, including leeches, 16*s.* 5*d.* and 7*s.* 11*d.* in the two years respectively; wine and spirits, 6*s.* 10*d.* and 5*s.* 11*d.*; porter and

ale, 5s. 3d. and 3s. 1d.; milk, 6s. 2d. and 3s. 3d.; laundry, 2s. 10d. and 4s. 10d.; instruments and surgical appliances, 1s. 9d. and 5s. 2d.; staff, £1 0s. 3d. and £1 14s. 3d.; meat, 18s. 4d. and £1 2s. 2d. The difference in the cost of leeches is significant. In 1845 14,800 were used at a cost of £143; in 1880, 425 at a cost of £1 16s. In these estimates the cost of out-patients is disregarded, and the whole expenditure of the hospital debited to in-patients. Mr. Hawkins thinks that not more than £300 or £400 could be subtracted for out-patients, which in 1830 numbered 3000, and in 1880 15,000, many having, he says, very trifling ailments. We fear there is a tendency in hospitals generally to underrate the ailments of out-patients, though they often involve a great deal of suffering.

FATAL ACCIDENT TO STEPHEN SHUTE ALFORD, F.R.C.S.

ON Saturday, July 2nd, Mr. Alford was crossing the line at a level near Duddling Hill Station, on the Midland Railway, when he was knocked down by a passing luggage train, which was coming in a direction opposite to that of a passenger train which had just left the station, and in which train Mr. Alford had travelled, on his way to visit a patient. The sufferer, who was partly unconscious, was as soon as possible removed to his residence, where he was attended by his partner and his son, Mr. Frederick S. Alford, in consultation with Mr. Erichsen. Several of the ribs were found to be fractured, one foot was nearly severed, and had to be removed, and there were other injuries about the thorax and abdomen. Mr Alford never rallied from the shock, and died on Tuesday, at seven P.M. The deceased gentleman was sixty years of age, and was a brother of the late Dean of Canterbury.

VIOLATIONS OF THE MEDICAL ACT IN QUEENSLAND.

THE public and the profession in Queensland seem to have the same reason to complain as we have, that there is no satisfactory arrangement for the application of the Medical Act. A bad case of false pretence having occurred, the Medical Board instructed its secretary to apply to the Attorney-General to prosecute. He declined, saying the Medical Board could prosecute if they thought a breach of the law had been committed. The Board then applied to the Under Colonial Secretary for a sum of money, £50, to enable them to prosecute. The Under Colonial Secretary replied that he was unable to grant the money. So laws are made to be despised by want of provisions for their application.

DEATHS OF EMINENT FOREIGN SAVANS.

TO the roll of the illustrious dead who have enriched the world by their researches have to be added the names of Professor Loze of Berlin, author of "General Pathology and Therapeutics as a Mechanical Science;" Professor St. Claire Deville, the eminent chemist; and Dr. Mandl, the laryngologist, who from ill health had for some time retired from the active duties of his profession.

THE HOSPITAL SUNDAY FUND.

THE total amount received at the Mansion House up to noon of the 7th inst. on behalf of the Hospital Sunday Fund reached the sum of £28,500.

THE Director of the Lunatic Asylum near Toulouse, Dr. Marchant, while paying his usual daily visit, was mortally wounded by the contents of a revolver, discharged at him by a patient. The injury proved fatal in a few hours.

AT the Royal College of Surgeons the following candidates have applied to be elected to the new office of Examiner in Medicine and in Midwifery respectively for the ensuing year—viz., in Medicine, Dr. William Henry Allchin, Dr. Henry Charlton Bastian, Dr. Arthur Julius Pollock, Dr. Frederick Thomas Roberts, and Dr. Isaac Burney Yeo. For Midwifery there is only one candidate—viz., Dr. John Baptiste Potter; but, doubtless, other gentlemen in both subjects will be nominated at the meeting of the committee this day (Friday). Candidates must be Fellows of the Royal College of Physicians of London.

WE regret to receive intelligence of the death, by being thrown from his carriage, of Thomas A. Gregory, M.D. Edin., of Fredericton, New Brunswick. Dr. Gregory was the leading physician in the town, and the sudden termination of his career has caused a painful shock to his fellow-citizens, by whom he was highly esteemed.

THE opening ceremony of the International Medical and Sanitary Exhibition will take place at the Albert Hall on Saturday, the 16th instant. The President, Earl Spencer, will take the chair at 4.30 P.M., supported by Earl Granville, the Right Hon. J. G. Dodson, Sir J. Paget, and J. E. Erichsen, Esq.

AT the inquest held on the bodies of the four soldiers who succumbed to sunstroke at Aldershot, the jury returned a verdict in each case to the effect that the deceased died from natural causes, accelerated by heat. An expression of opinion was added, that the military authorities should fix a limit to the time of holding field-days in hot weather.

M. PASTEUR, who has a prospect of winning one of the three vacant seats in the Academy, will receive, it is believed, the Grand Cross of the Legion of Honour in the promotions which will accompany the 14th of July National Fête.

THE death is announced of Surgeon-Major Thomas G. Fitzgerald, half-pay, Army Medical Department. Mr. Fitzgerald entered the army in 1852, and retired in 1877. He served in the Crimea, Franco-Prussian war, Gibraltar, and was for many years at army head-quarters, Whitehall-yard.

SURG.-MAJOR SANDFORD MOORE, M.A. and M.B. Dub., was admitted a member of the Bar, Inner Temple, on the 29th ult.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Bradford (Yorkshire).—Mr. Butterfield reports for the year 1880, among an estimated population of 197,196, a birth-rate of 32·3 per 1000 living, and a death-rate of 20·9. On two several occasions, thanks to the advantages given by the borough infectious disease hospital, the introduction of small-pox contagium was prevented from spreading. The hospital also proved valuable in arresting the dissemination of scarlet fever, 241 cases of this disease being admitted there. The following is instructive with regard to the spread of this disease: "Several instances occurred during the year of scarlet fever spreading from schools. The most notable was the case of a Board School in Manningham, where some of the children amused themselves by picking

the shreds of epidermis from the desquamating skins of two of their companions." With regard to diphtheria, Mr. Butterfield observes that the condition most frequently observed associated with it was dampness of site. Diarrhœa was very fatal in the third quarter of the year. "That 22·7 per cent. of the deaths, or nearly one quarter, of those under one year were illegitimate children is a very suggestive fact. I have noticed, and my observation has been confirmed by several practitioners, that there exists in Bradford among the lower classes an indifference to infant life, and that the doctor is too often only called in at the last moment to avoid the necessity for an inquest. Of the deaths of infants from diarrhœa, about 80 per cent. were children who had been fed otherwise than from the breast. It is well known that children brought up by hand are more liable to gastric disturbance than those who are naturally fed. But in hot weather, cow's milk very soon undergoes putrefactive change, and is then poisonous to the delicate organs of an infant. Assuming that the milk is wholesome when it leaves the farm, which is frequently not the case owing to the cows being fed on sour grains, it is first well shaken on the railway, then carted through the town and distributed to overcrowded shops. From these shops, where it generally becomes dotted with flies, it is sold in small quantities to poor people, who generally keep it on a shelf over the sink; when it reaches the baby's stomach it is too often sucked from a dirty bottle through a filthy tube. This, with the addition of arrowroot, cornflour, or bread-sops, which to an infant are quite indigestible, is the food of a large proportion of the infants born in Bradford and other large manufacturing towns. At other seasons the effects of this and similar diet is shown in deaths from tabes mesenterica, atrophy, wasting, debility, convulsions, and other certified synonyms for starvation and neglect. A close and confined atmosphere, especially when polluted with decomposing filth, is also a powerful determining cause of summer diarrhœa." Mr. Butterfield briefly refers to the action taken in respect to "woolsorters' disease," and to the general results of Dr. Bell's investigation of the subject as observed at Bradford to the present time; to the excellent results obtained by an experimental trial of Fryer's patent destructor for dealing with ashpit refuse; to the efficacy of working of Ransome's self-regulating disinfecting apparatus, &c., and he states that under a section of a local Act, which provides that no building shall be occupied as a dwelling until it has been examined by the medical officer of health, and certified by him as fit for habitation, 535 houses had been examined during the year. Of these houses it was found necessary to withhold the certificates in forty-eight cases on account of dampness and other defects. A power of this kind judiciously wielded must exercise a most important influence on the supply of wholesome houses.

Dublin.—Dr. Cameron reports for 1880, among a population estimated at 350,000, a birth-rate of 34 per 1000 living, and a death-rate of 37·8. The average annual death-rate of the city for the previous ten years is given at 27·75. Part of the excess recorded in 1880 is due to a much improved registration of deaths that obtained during the year. Discussing the causes of the high death-rate of Dublin, Dr. Cameron says they are chiefly the following:—"The bad condition of the tenemented dwellings; the defective state of the house drains; the existence of ill-kept dairy-yards and slaughterhouses; the presence of manure and street-sweepings depôts; the want of a proper system of domestic scavenging; the want of convalescent hospitals for infectious cases; the emanations from chemical and artificial manure works; the concealment of cases of infectious diseases; defective appliances for disinfecting the clothing and habitation of persons affected with contagious diseases; the prevalence of intemperate and filthy habits amongst large classes of the people." Reviewing these several causes, Dr. Cameron assigns little importance to the emanations from chemical works, but he adds as amongst the greatest factors in the production of the high death-rate of Dublin, the poverty of a large proportion of the people. The picture he draws of the changes which have taken place in the condition of Dublin during the last half century is painful in the extreme. He shows the extinction of not a few industries; the movement of the wealthier classes of the population from the city into the suburbs, and with them of the large establishments which at one time gave employment to so many individuals; the deposit left behind of numerous individuals who have to earn their living from day to day, while their means of livelihood have been diverted elsewhere; the emigration of labourers and the poorer classes from the country into the town adding to the difficulties of obtaining livelihood by an already too insufficiently occupied labouring population. He shows also large sections of the city, formerly inhabited by the well-to-do and wealthy, given up to the poorer classes for residences, the houses as tenemented houses, the former gardens covered up with houses, also tenemented; even the stables converted into tenemented buildings. The unutterable squalidness, poverty, and raggedness which exist in these places are indescribably distressing. Of the 25,000 houses in Dublin nearly 10,000 are described as tenemented—that is to say, occupied by more than one family, and a great proportion of these have no proper sanitary provision. Everything has to be done in the way of providing decent house accommodation for the lowest-wage population, and there does not appear to be anyone to do it except the sanitary authority. The matter has been suffered to drift into this state apparently without attempt to arrest the natural course of events, or without any true foresight having been exercised by the Corporation, and now it has to confront a question which might appal a local authority with unlimited means. Even the commonest items of sanitary administration seem to have been allowed to lapse. The state of house-drains described is something astounding in a great city, and that of the privies and ashpits attached to tenemented houses and of the scavenging still more so. Dublin, however, is at last beginning to arouse itself to a sense of the sanitary duties which devolve upon it, and to an appreciation of the lessons which have been so long dinned into the ears of the Corporation by the able medical officers of health it has had the good fortune to possess; and let us hope that it will no longer commit the fatal blunder of neglecting the detailed sanitary duties pending the concoction and completion of any great and costly sanitary works it may find it desirable to take in hand. Dr. Cameron, in his report for May, states that the mortality of the city during that period was at the annual rate of 27·05 per 1000 living—28·4 on the northern side of the city, and 25·95 on the southern. The deaths from zymotic diseases included fifteen from typhus fever and seventeen from typhoid fever; and the admissions to hospitals 128 cases of typhus and twelve of typhoid fever. Dr. Cameron reports that he had interviews with the medical officers of the House of Industry Hospitals in reference to "the practice which prevails in that institution of placing in the same ward persons affected with different zymotic diseases." The interview appears to have had most successful results in respect to this curious practice, for in a note which Dr. Cameron quotes from the chairman of the hospital, it is stated that in future cases of typhus and enteric fever are to be separated, and that "already separate wards have been provided for small-pox cases."

Portsmouth, Urban.—Dr. Sykes, who succeeded Dr. Turner only on the 17th Dec. 1880, contents himself with making a formal report for that year, and offering some observations on the principles of house-drainage and the ventilation of drains. He shows that in 1880 the birth-rate of Portsmouth was 32·77 per 1000 inhabitants and the death-rate 18·7. He would have the law as to notification of infectious diseases which applies to common lodging-houses apply to lodging-houses in general, particularly as regards health-resorts. It would appear that Portsmouth has become afflicted with the plague of "jerry-building," and that this important town has not taken the precaution of arming itself against the evils which must arise from the plague.

Leven (Fife).—Leven is a small manufacturing town of Fife, possessing a foundry, a starch-work, a paper-mill, a brick manufactory, and a population of 3040. The town suffered from cholera in 1866, and at this time it had no proper drainage and the water-supply was much polluted. Both these defects have since been remedied, and the water is now described as good and pure, and the public drainage excellent. Mr. Balfour, the sanitary medical officer, reports a great reduction in the prevalence of zymotic diseases in the towns, and a death-rate from all causes of 14 per 1000 living during the year 1880.

Mid-Cheshire Combined Sanitary District.—This combination includes the rural sanitary districts of Altrincham, Congleton, Nantwich, and Northwich, and the urban sanitary districts of Lymm, Middlewich, Nantwich, Northwich, Sandbach, and Winsford. Mr. John Makinson Fox acts as medical officer of health for the combination. The population of the combined district is estimated at 133,220; the

birth-rate in 1880 was 35·3 per 1000 living, and the death-rate 18·1. Mr. Fox reports upon each of the sanitary districts which enter into the combination separately, and in so doing shows the requirements and progress of the several districts. On the whole the reports are most satisfactory, as although they afford evidence that much remains to be done, they also show that much has been done to improve their sanitary condition, and that, under the advice and supervision of an excellent and energetic medical officer of health, very decided sanitary progress is being made over a large tract of country presenting very different sanitary problems to be dealt with in different parts.

Ealing, Urban (*Middlesex.*)—Mr. C. A. Patten reports for this district in 1880 among a population estimated at 15,700, a death-rate of 12·2 per 1000 living, "by far the lowest rate of mortality," he says, "yet exhibited in this district, and one which indicates and bears out most indisputably our reputation of extreme healthiness; one, probably, not to be surpassed by any London suburb, and but seldom, I venture to say, by any locality in the kingdom." He congratulates his authority, moreover, on the marked diminution in the district of fatal cases of zymotic disease; nevertheless, he is careful to point out how the district, owing to its rapid increment of population and its increasing communication with London, is becoming less isolated from the great city, and thus more and more exposed to the importation of infectious diseases. He urges upon his authority, therefore, the necessity for the provision of hospital accommodation for infectious diseases, and also a "home of refuge" to which families may be conveyed when necessary, while their houses may be subjected to disinfection. Mr. Patten, indeed, would not have the sanitary authority contented with the present state of healthiness of the district, but would have them take all necessary precautions for securing that that health shall not merely be maintained intact, but shall even be improved upon.

Leeds.—Dr. Goldie in his report for the month of May gives a most satisfactory account of the health of the population during that period. The births were at the rate of 35·1 per 1000 living and the deaths 18·8. The infantile death-rate was as low as 5·3 per 1000 living at all ages, and the death-rate from the seven principal zymotic diseases 1·4.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

English urban mortality showed but a slight increase last week upon the low rate prevailing in the previous week. In twenty of the largest towns, estimated by the Registrar-General to contain in the middle of this year a population somewhat exceeding seven and a half millions, 5126 births and 2849 deaths were registered last week. The births were 60, and the deaths so many as 408 below the average weekly numbers during 1880. The annual rate of mortality in the twenty towns, which had been equal to 19·5 and 18·5 per 1000 in the two preceding weeks, rose again last week to 19·5. The lowest rates in the twenty towns last week were 13·2 in Plymouth, 13·8 in Salford, 14·8 in Hull, and 16·4 both in Nottingham and Sheffield. The rates in the other towns ranged upwards to 22·0 in Leicester, 22·7 in Bradford, 24·2 in Oldham, and 25·1 in Liverpool. During the thirteen weeks of the past quarter the death-rates in the twenty towns averaged 20·5 per 1000, against 22·2, the average rate in the corresponding quarters of the five years 1876–80. The deaths referred to the principal zymotic diseases in the twenty towns, which had been 462 and 441 in the two previous weeks, rose to 498 last week; these included 130 from diarrhœa, 100 from measles, 91 from whooping-cough, 66 from scarlet fever, 59 from small-pox, 28 from fever (principally enteric), and 24 from diphtheria. The annual death-rate from these zymotic diseases averaged 3·4 per 1000 in the twenty towns; it ranged from 0·4 and 1·0 in Sunderland and Brighton, to 5·1 in Leicester and 5·5 in Liverpool. The largest proportional fatality of measles occurred in Bristol and Liverpool; of scarlet fever in Leicester and Nottingham; and of whooping-cough in Birmingham, Leicester, and Portsmouth. The highest death-rate from enteric fever was recorded in Portsmouth. The 24 deaths from diphtheria in the twenty towns included 18 in London, 3 in Liverpool, and 2 in Portsmouth. The fatal cases of diarrhœa, which had slowly increased from 27 to 73 in the five preceding weeks, further rose to 130 last week; the greatest fatality occurred in Leeds and Oldham. Small-pox caused 56 more deaths in London and its outer ring of suburban districts, 5 in Liverpool, and 1 each in Brighton and Oldham; no fatal case of this disease was recorded in any of the sixteen other large provincial towns. The number of small-pox patients in the Metropolitan Asylum Hospitals, which in the three preceding weeks had declined from 1644 to 1578, further fell to 1408 on Saturday last, of whom 421 were inmates of the Convalescent Camp Hospital at Darenth. The new cases of small-pox admitted to these hospitals, which had been 358 and 321 in the two previous weeks, further declined to 254 last week. The St. Pancras Sanatorium at Finchley contained 28 small-pox patients on Saturday last. The number of patients in the Highgate Small-pox Hospital was 85 at the end of last week, 32 new cases having been admitted during the week.

The deaths referred to diseases of the respiratory organs in London, which had been 225 and 210 in the two preceding weeks, further declined to 181 last week, and were 7 below the corrected average number in the corresponding week of the last ten years; they included 83 from bronchitis and 73 from pneumonia. The annual death-rate from lung diseases, exclusive of phthisis, did not exceed 2·5 per 1000 in London last week; the rate from the same diseases was equal to 5·6 in Liverpool, but did not exceed 2·1 in Salford.

The causes of 73, or 2·6 per cent., of the deaths in the twenty towns last week were not certified either by a registered medical practitioner or by a coroner. The proportion of uncertified deaths in London did not exceed 1·3 per cent., whereas it averaged 3·9 in the nineteen provincial towns. No uncertified deaths were registered last week in Brighton, Portsmouth, Birmingham, or Leicester; the proportions of such deaths were largest in Oldham, Sheffield, Leeds, and Sunderland.

HEALTH OF SCOTCH TOWNS.

The present aggregate population of eight of the largest Scotch towns, estimated from the enumerated numbers in April last, is 1,206,023. The annual death-rate in these eight towns during last week was equal to 20·9 per 1000 of this estimated population, against 23·6 and 19·6 in the two preceding weeks; this rate exceeded by 1·4 the average rate in the twenty large English towns last week. The rates in the eight Scotch towns ranged from 15·0 and 15·7 in Greenock and Perth, to 23·7 and 25·1 in Glasgow and Paisley. The deaths referred to the principal zymotic diseases in the eight towns, which had been 84 and 63 in the two previous weeks, rose to 91 last week; they included 27 from diarrhœa, 18 from "fever," 15 from whooping-cough, 15 from measles, 10 from scarlet fever, 6 from diphtheria, and not one from small-pox. The annual death-rate from these zymotic diseases averaged 3·9 per 1000 in the eight towns, and was 0·5 above the average rate from the same diseases in the twenty English towns. This zymotic rate ranged in the eight Scotch towns from 0·9 in Paisley, and 1·5 in Dundee and Greenock, to 5·2 and 5·4 in Perth and Edinburgh. The fatal cases of diarrhœa in the eight towns, which had been 27 and 18 in the two previous weeks, rose again last week to 27, and showed a proportional fatality considerably in excess of that which prevailed in the twenty English towns. The largest diarrhœa fatality occurred in Glasgow, Edinburgh, and Aberdeen. The deaths referred to "fever" (including typhus, enteric, and simple) rose last week to 18, from 13 and 5 in the two preceding weeks, and included 9 in Glasgow, 5 in Edinburgh, and 3 in Leith; they were equal to an annual rate of 0·78 per 1000, which was more than four times the average rate from the same causes in the twenty English towns. The 15 deaths from whooping-cough exceeded the number in the previous week by 4, and included 6 in Glasgow and 4 in Edinburgh. The fatal cases both of measles and scarlet fever also exceeded the numbers in recent weeks. Eleven of the 15 deaths from measles occurred in Glasgow; and of the 10 deaths from scarlet fever 6 occurred in Edinburgh, and 4 in Glasgow. Three of the 6 deaths referred to diphtheria were returned in Glasgow. The deaths attributed to acute diseases of the lungs (bronchitis, pneumonia, and pleurisy) in the eight towns, which had been 110 and 114 in the two preceding weeks, declined to 98 last week, and were equal to an annual rate of 4·2 per 1000; whereas the rate from the same diseases in London did not exceed 2·2. The greatest fatality of lung diseases occurred last week in Glasgow, Dundee, and Paisley.

HEALTH OF DUBLIN.

The rate of mortality in Dublin showed a marked decline last week. The annual death-rate, calculated upon the population enumerated in April last, which had been equal to 24·3 and 24·5 in the two previous weeks, declined to 18·7 last week. During the thirteen weeks of the past quarter, however, the death-rate in the city averaged 25·7 per 1000, against 20·2 in London and 21·1 in Edinburgh. The 125 deaths in Dublin last week showed a decline of 39 from the number returned in the previous week, and included but 5, or 4 per cent., that were referred to the principal zymotic diseases, against 13 and 19 in the two preceding weeks. These 5 deaths from zymotic diseases included 2 from fever (typhus, enteric, or simple), 2 from diarrhœa, and 1 from whooping-cough, whereas no deaths were referred either to small-pox, measles, scarlet fever, or diphtheria. The annual death-rate from these zymotic diseases was only 0·7 per 1000 in Dublin, while the rate from the same diseases was equal to 4·0 in London and 5·5 in Edinburgh. The deaths referred to fever showed a decline of 6 from the number returned in each of the two preceding weeks; the annual death-rate from this cause, however, somewhat exceeded the average rate in the twenty large English towns. The 2 deaths from diarrhœa were 4 less than the number in the previous week. The deaths of infants showed a considerable decline, while those of elderly persons were more numerous than in any recent week.

IMPROVED HEALTH OF LIVERPOOL.

In Dr. Taylor's report upon the health of Liverpool during 1880, which has just been issued, he calls attention to a fact which speaks eloquently of the improved sanitary condition of that city. The increase of population within the city of Liverpool during the last decade considerably exceeded 50,000 persons, and yet the number of deaths in the ten years 1871–80 were fewer by 8600 than those recorded in the preceding ten years. The annual death-rate in the more recent decade, we are told, did not average more than 28·5 per 1000, against 33·0 in the preceding ten years. This implies a decline of a seventh in the mortality of the city; and, further, that during the last ten years no fewer than 24,334 inhabitants survived, who would have died if the rate of mortality had been equal to that which prevailed in the preceding decade. It is well to bear in mind that an annual death-rate of 28·5 per 1000 implies (in a stationary or life-table population) a mean duration of life of thirty-five years, or five more years than a death-rate of 33·0 per 1000. Approximately, therefore, the recent reduction in the Liverpool death-rate represents an addition of five years to the mean duration of life in the city.

HEALTH MATTERS GENERALLY AT HOME AND ABROAD.

PUBLIC HEALTH IN LYONS.

Dr. P. Meynet, of the Hôpital de la Charité, has just published an important essay on the health of the population of Lyons, and on the causes of the excessive mortality. The death-rate for the year 1880 amounted to 28·50 per 1000, and was therefore more considerable than Paris or most of the large towns. Of course, Lyons, built on the banks of, and in a great measure surrounded by, two rivers, the Rhône and the Saône, is much exposed to fogs and damp; but Dr. Meynet considers that the overcrowding of the houses is a much more active cause of disease. He calculates that in London there is an average of only 7·71 inhabitants for each house. The average in Paris is 35·17, while in Lyons it amounts to forty-one persons per house. The insufficient water-supply, the bad house-drainage, and the imperfections of the sewers are also denounced; and an earnest appeal is made to the municipality to remedy these evils. In our artisans' dwellings the continental system of flats has been adopted; but, in spite of the enormous number of persons living under the same roof, the death-rate in these dwellings is notoriously below that of the average surrounding population. This is due on the whole to the careful drainage and sanitary superintendence of these model, though large and densely populated, dwellings. It is the utter want of knowledge as to the dangers of sewer gas, and the consequent necessity of preventing its introduction into the houses, that for the most part renders continental towns unwholesome.

At the Dorking Local Board of Health on Wednesday, the occurrence of cases of enteric fever, scarlet fever, and small-pox in the district was reported by the medical officer, whose request that fees might be paid to medical practitioners for information of fresh cases was acceded to by the Board.

It is stated that small-pox had appeared amongst the convicts in Holloway prison. Prompt measures, however, were taken to have the patients, few in number, removed to the hospital, the Home Secretary remitting their terms of imprisonment, which were short.

Martinique appears to be the seat of a severe outbreak of yellow fever. The hospital at Fort de France is reported to be full of patients suffering from the disease.

THE SERVICES.

THE WINDSOR REVIEW.

The Bearer Company of the Volunteer Ambulance Department, ordered to Windsor on Saturday, will consist of ninety-six non-commissioned officers and men, all of whom have gone through the authorised training in stretcher and ambulance drill, and received certificates of efficiency. Surgeon-Major William Gasteen, Army Medical Department, has been selected to command the Company with Surgeons W. G. Shepherd, Victoria Rifles; G. E. Norton, 4th Middlesex; R. A. Jackson, 38th Middlesex; W. Platt, Baynes, and Daniells attached for duty as company officers. There will be two field hospitals stationed on the ground, one with each Army Corps; that with the First Army Corps will be under the superintendence of Surgeon John G. Westmacott, London Scottish, with Lieutenant of Orderlies, W. Mackay, Army Hospital Corps, in charge of equipment. That with the Second Army Corps will be under Surgeon Wykeham H. Lydall, 40th Middlesex, with Lieutenant A. Maclure, London Scottish. Each hospital will consist of six tents with beds, medical stores, and comforts, water carts, ambulances, stretchers, and a liberal supply of ice. The regimental surgeons and stretcher bearers of corps will accompany their respective battalions, marching past in rear of the last Company.

BENGAL MEDICAL ESTABLISHMENT.—To be Surgeons-Major: Surgeons Christopher William Calthrop, Richard Careless Sanders, Edwin Sanders, Benjamin Franklin, Frederick Pooly Edis, Robert Temple Wright, M.D., George McBride Davis, M.D., Kali Pada Gupta, Henry James Linton.

MADRAS MEDICAL ESTABLISHMENT.—To be Surgeons-Major: Surgeons William Price, M.D., Samuel Matthias Tyrrell, William Hope Boalth, Joseph Backhouse.

BOMBAY MEDICAL ESTABLISHMENT.—To be Surgeons-Major: Surgeons John Alexander Howell, Charles Thomas Peters, Edward Colson, Colin William MacRury.

Intelligence has been received of the death from fever, at Prahsu, of Surgeon Wilson, M.D., of the Army Medical Department, an officer who distinguished himself in the Zulu war, and accompanied Colonel Pearson to Ekowe. He had served in all the little wars of late years in Africa and India, in which Great Britain has been engaged.

Surgeons-Major P. Murtagh and T. W. Jackson, Army Medical Department, have been appointed to the Poonah circle for duty, on return from field service in Southern Afghanistan.

Surgeon-Major Dallas Edge, Army Medical Department, has been granted six months' leave from India on private affairs.

In a pamphlet on "The Origin of the Volunteer Movement of 1852, and the History of the First Volunteer Rifle Corps," Mr. Pycroft shows that we are indebted for this great national movement, in considerable measure, to a member of our profession, Dr. J. C. Bucknill, F.R.S. He appears to have taken up the subject in 1852, when the defence of the country against foreign invasion occupied much of the public attention. In conjunction with some other gentlemen, and with the valuable assistance of Earl Fortescue, he got together the germs of the Exeter and South Devon Volunteer Rifle Corps, which was finally incorporated by the sanction of Her Majesty on the 26th March, 1852. The corps was the first thus sanctioned, and takes its place

in the order of procedure in the Army List as the senior of the Volunteer Rifle Corps.

ADMIRALTY. — The following appointments have been made:—Surgeon Henry B. Guppy, to the *Lark*, when commissioned on the 5th inst.; Surgeon James H. Beattie, to the *Inflexible*, when commissioned; Surgeon Horatio S. R. Sparrow, to the *Boscawen*; Surgeon Anthony Kidd, to the *Dido*; and Surgeon Otway P. Browne, to the *Flirt*.

The Lords Commissioners of the Admiralty have awarded the Greenwich Hospital Pension of £50 a year to Fleet-Surgeon Gerald Yeo, void by the death of Retired Deputy-Inspector-General H. Jameson.

THE INTERNATIONAL MEDICAL CONGRESS.

THE death of M. Raynaud, which we announced last week, has deprived the Congress of one of its orators, to listen to whom would have been one of the chief treats of a week which promises to be full of interest. M. Raynaud had acquired a great reputation as an orator, and the subject of his address, "Scepticism in Medicine in the Past and Present," is one that in able hands must always prove attractive. M. Raynaud's death was quite sudden, and was caused by an attack of angina pectoris, from which he had suffered for some months. Fortunately, he has left the MS. of his address prepared for delivery. Under these circumstances it would be an appropriate mark of respect to have it read by one of his friends, and for this task, honourable but painful, no man is better qualified than Dr. Guéneau de Mussy. Although it was doubtful if Professor Virchow would be able to attend the Congress, he has, as we stated last week, at length expressed his intention to be present, and, at the request of the Executive, to give an address on "The Bearing of Pathological Experiments on Medicine." The date fixed for Professor Virchow's address is Thursday, August 4th. There is no name more famous in natural science than that of Rudolph Virchow; no man has exerted a greater influence upon the scientific teaching of his day, and his presence and active participation in the work of the Congress will greatly add to the *éclat* and success of the forthcoming meeting.

While the general arrangements for the Congress are such as to command general approval, it is a matter of great regret that Sir William Jenner will not be able to take a more prominent part in the scientific work of the meeting. No one in the profession commands a more hearty, complete, and universal confidence, whether we regard him as a man of science, as a practitioner of his art, as a teacher, or as a rigid upholder of the honour and dignity of the profession. According to present arrangements Sir William Jenner will preside at the first general meeting of the Congress, and will deliver the address of welcome. He will thus take a prominent position in the formal work of the Congress, which will be gladly welcomed by all his brethren. We still, however, cherish the hope that he will be able at some one of the meetings to give a scientific address, either on the clinical study of medicine or on some kindred subject. A scientific contribution from one who without question ranks as the head of the profession in Great Britain will go far to make this great meeting of medical men from all parts of the world in our metropolis a success. A resolution formally opening the Congress will be moved by Sir Risdon Bennett and seconded by Professor Donders at the first general meeting after Sir William Jenner's address.

A suggestion has been made that on one of the evenings a fête should be given at the Botanical Society's Gardens. Many obstacles, however, presented themselves to the successful carrying out of this plan, and the Executive Committee has, finally, abandoned the idea. Surely the programme is full enough already! Three evenings will be occupied with receptions or fêtes, and those that are not so filled up will not be too many for the exercise of private hospitality, or for the unrivalled attractions of London society. His Royal Highness the Prince of Wales takes great interest in the success of the meeting, and has not only promised to attend the opening meeting of the Congress, but has accepted an invitation to lunch afterwards with Sir James Paget, and to dine in the evening with Sir William Gull, who is asking the Vice-Presidents and Council of the Medical Section, the Presidents of the other sections, and some distinguished foreign visitors to meet His Royal Highness. The Prince has also signified his intention of being present at the Reception at the South Kensington Museum the same evening, to which it is hoped the Princess will accompany him. Every member of the Congress will be entitled to take one lady to the Soirée at South Kensington Museum; the members only are asked to the College of Surgeons.

The entertainment by the Corporation of the City of London will be given on Friday, August 5th, and the reception at the College of Surgeons will be postponed to Monday, Aug. 8th. An announcement has been made of the sum of money voted by the Corporation for its soirée, but the hospitality of the City is so well known that we need no assurance of such kind that it will be on a magnificent scale. The old hall itself, and still more the museum and library, are of considerable interest, while the pageantry of the City Court is such as to excite the curiosity of more than our foreign guests. Two thousand cards of invitation have been placed at the disposal of the Reception Committee of the Congress, a certain number of which are for ladies, and the Corporation has reserved 1000 cards for its own use. The programme of proceedings contains, in addition to these, a long list of entertainments, to which only a limited number is invited. Although a book is kept at the College of Physicians for the purpose of recording the names of those desirous of joining these parties, we would remind our readers that the ultimate nomination for invitation will rest with the Reception Committee. They will have a difficult duty, and it behoves everyone loyally to support them in their decisions. The barest hospitality renders it absolutely essential that our foreign friends should have every facility afforded them of enjoying the entertainments provided on this occasion. It is of all occasions one specially unsuited for a display of selfishness, which, if indulged in, would leave an unfavourable impression that will take years to erase.

Nearly 1800 medical men have notified their intention of attending the Congress, and about 500 have already paid their subscriptions. Medical students will be admitted to the business meetings of the Congress on the payment of an entrance fee of 10*s.* 6*d.*

The following distinguished foreigners have accepted the position of honorary vice-presidents of the Congress:—Profs. Donders, Brown-Séquard, Kölliker, Ollier, Pflüger, O. Liebreich, Loven, Chauveau, Hardy, Holmgren, Tarnier, Baccelli, Verneuil, Santesson, Goltz, Pasteur, Tilanus, Virchow, Billings.

At a special general meeting of the Medical Society of London, to be held on Monday next, the following gentlemen will be proposed for election as Honorary Fellows in connexion with the Congress:—Prof. Bamberger, Dr. G. H. Billings, Dr. Bigelow, Prof. Billroth, Prof. Charcot, Prof. Da Costa, Dr. Emmet, Profs. Haller, Nussbaum, Tarnier, Verneuil, and Volkmann.

THE HARVEY TERCENTENARY MEMORIAL.

A MEETING of the subscribers to this fund was held at the Royal College of Physicians on June 29th, Sir George Burrows in the chair. A statement respecting the arrangements sanctioned, and carried out by the Executive Committee, having been read by Mr. Eastes and adopted by the meeting, the following resolutions were agreed to:—1. "That the statue of Harvey be presented to the Mayor and Corporation of the borough of Folkestone, as the elected representatives of that borough, to be preserved by them in honour of the memory of William Harvey, the discoverer of the circulation of the blood." 2. "That Professor Owen, C.B., be invited to unveil the statue at Folkestone, and to make such presentation on behalf of the subscribers to the Harvey Tercentenary Memorial Fund." 3. "That the Executive Committee, consisting of Sir George Burrows, Mr. Prescott Hewett, Dr. Quain, Dr. Owen Rees, Mr. John Simon, Mr. E. H. Lushington, Mr. J. J. Lonsdale, the Mayor of Folkestone, Mr. W. Bateman, Mr. W. G. S. Harrison, and Mr. George Eastes have full power to act in the future, on behalf of the subscribers, in all matters connected with the fund, and with the settlement of the accounts, and in the final closing of the Fund." 4. "That Dr. J. G. Glover and Dr. J. C.

Hare be requested still to act as auditors to the fund, to make the final audit, and to present a report upon the fund to the above-named Executive Committee."

MEDICAL NOTES IN PARLIAMENT.

IN the House of Lords on Thursday, the 1st inst., the Coroners (Ireland) Bill was read a second time.

In the House of Commons on Monday, Mr. Birkbeck gave notice that he will move for a copy of report of Mr. Spencer Walpole, Inspector of Fisheries, on the destruction of fish at Billingsgate, in consequence of the alleged inadequate accommodation at Billingsgate Market.

On Tuesday, the report for 1879 of the Army Medical Department was presented, as also was the preliminary report of the census of England and Wales.

On Wednesday, the Lunacy Law Assimilation (Ireland) Bill was withdrawn. The following notice was given for Monday:—Mr O'Shaughnessy, to ask the Chief Secretary to the Lord Lieutenant of Ireland when the report of the Inspectors of Lunatic Asylums for 1880, which was presented on June 22nd, will be available for members, and why a report of so much importance is printed as "a short delivery" report, while reports of little general interest are circulated to members.

The Aldershot Casualties.

On Thursday, Mr. Childers, replying to Mr. Brand, said no casualties actually occurred at the Aldershot review on Monday, but the troops hurried back to their dinners, and a number of men fell out on the homeward march. Nineteen were sent into hospital. Three died of sunstroke, including a stout man of forty-five, who did not fall out, and two men of thirty-three and thirty-two years respectively. Of these two, one was shown by post-mortem examination to be much predisposed to disease of that kind, and the other was healthy. A fourth death was that of an officer's servant from heart disease, but he had been riding on a waggon all day, and had not complained. The brigade which went over the most ground and did the most work had the smallest number of men fall out. A War Office circular, calling attention to the rule that on exceptionally hot days troops should only be exercised in the early morning, was issued on Tuesday, and beyond that Mr. Childers did not think it advisable to hamper the discretion of commanding officers.

The Windsor Review.

Mr. Childers also made a statement as to the provision to be made for the men at the Volunteer Review at Windsor on Saturday. Ample supplies of water and large blocks of ice would be in the rear, and at the railways, and great attention had been paid to the medical arrangements. If the weather should prove very hot, care will be taken to keep the men under the trees as much as possible.

Correspondence.

"Audi alteram partem."

TREATMENT OF SUSPENDED ANIMATION.

To the Editor of THE LANCET.

SIR,—An editorial in your valuable journal of Nov. 1st, 1879, commenting upon a preliminary report of the Resuscitation Committee of the Royal Medical and Chirurgical Society, which appeared in the same number, escaped neither my attention nor appreciation. My intention of silence out of respect to the existence of this Committee having been observed for more than three years, I think I may now fairly venture upon a few observations concerning the editorial in question, the report referred to, and the discussion which followed. Respecting your editorial, I may remark that the moderate patience it exhibited with the then rate of progress of the Committee, I might more fully share had I less knowledge of the delicacy, difficulty, and responsibility of the task it so gratuitously accepted.

With this slight exception your editorial, like the discussion of the Medical and Chirurgical Society, was so thoroughly fair and pertinent that little is left to me beyond enforcing what has already been said. With reference to the preliminary report itself, its suggestion, which seemed to receive such general approval, that the direct method be adopted "as to (*a*) the removal of fluid from the air-passages and stomach, and (*b*) the position of the head, neck, and trunk during the performance of artificial respiration," for reasons then assigned, was not premature, the facts upon which this recommendation was based having long before been fully and frequently demonstrated by me to the Committee. The alleged comparative respiratory measurements given in the report, however, while they were not devoid of scientific interest, and in a certain way are of fundamental purport, are, I regret to say, misleading, being in reality not the respiratory measurements of either method pure and simple as at any time likely to be practised in the treatment of the drowned. I have frequently shown to the Committee how it is that in the Humane Society's method the head and neck position is of itself liable so to hinder the exchange of air as to make it uncertain, insufficient, or impossible. In the direct method the distinctive head and neck position so completely changes all this, that it was without reserve at once suggested by the Committee for adoption.

In the alleged comparative respiratory measurements of the Humane Society's method, however, all these most important questions connected with the upper air-passages were silently vaulted at one leap, by the insertion of a carefully-fitting tube into the lower air-passages. One of the most distinctively valuable features of the direct method was thus ignored, the tracheotomy tube being, in the Society's method, substituted for it, entirely to the disadvantage of the direct method, while the conditions in both cases were as different as they could be made to be from those encountered in the actual treatment of the drowned. Again, in the Humane Society's method, there is not the slightest suggestion about drainage. In the alleged experiments by the Society's method, however, drainage had in advance already been carefully completed.

I simply submit that a duly-selected, drained and tracheotomised cadaver, with a suite of expert operators, on the one hand, and a drowned man at the water's edge with the solitary bystander having nothing but the Royal Humane Society's instructions to guide him or help him, on the other hand, present insufficient analogy for conclusions which may be accepted as scientific, reliable, or just.

For anything like a comparative experiment with two methods of treating the drowned the cadaver should be newly submerged, the printed form of instructions of the respective methods be from the beginning strictly followed, and the respiratory measurements be face-measurements, registering only the to-and-fro air currents through the nose and mouth. When all this has been done, and not till then, it will begin to be possible for the question, which was scarcely approached by the preliminary report, but which is nevertheless the real question before the Committee, to be satisfactorily answered.

The question the Humane Society, the profession, and the public are waiting for the Committee to answer is this, which of the two printed forms of directions for the treatment of the drowned, that of the Royal Humane Society or that of the direct method, is likely to be of the greater use to the general public?

Further comparative tests of the adaptation of the respective methods in the special use for which they were intended might be continued as follows:—One of the forms of instruction may be handed to a policeman, for example, or any average layman; three minutes be allowed for the reading of it, and three minutes for the performance of the method on a comrade. Such trials may be multiplied *ad libitum*, and a decision be easily arrived at as to which printed form is the more quickly understood, and which method is the more intelligently practised by the larger number. For that matter tests by policemen might be extended to the cadaver newly submerged. These tests should cover the drainage question; the length of time the method is practicable by the same person; also face-respiratory measurements for different parts of that time, or for long periods.

Allowing that the direct method in the hands of experts yields 50 per cent. larger comparative respiratory face-measurement—but in the trials I have suggested it should be found to be more difficult to be understood and practised by but 40 per cent.—then I would say the direct method falls short

of the principal requirement, and for popular use it is not the better method. If, on the other hand, it yielded 40 per cent. less comparative respiratory face-measurement—provided always the exchange of air be sufficient to maintain life—but were 50 per cent. easier to understand and practise, then there would be no doubt about its being the better method for general use. Any tests short of these, or such as these, will leave the question practically just where it was. The Royal Humane Society professes to know nothing whatever on this subject, its function in this respect being merely that of publishers and distributors to the public of such form of instructions for the treatment of the drowned as may be commended to them for that purpose by the Royal Medical and Chirurgical Society.

The latter Society having accepted the responsibility of such recommendation, it would seem to be at liberty only to relinquish that responsibility altogether, or to prepare for the Royal Humane Society a form of instructions which they shall be content to have them publish *verbatim ad literatim*, as being, in the opinion of the Medical and Chirurgical Society, the best possible form of instructions for the treatment of the drowned for general and popular use. All this, I am glad to say, appears to be in accord with the views expressed by Mr. Timothy Holmes, who, during the discussion upon the report, concurred with the views of Mr. Clover respecting the "small amount of air sufficient to keep life going," and also as to the "importance of the ease and handiness he was struck with in the direct method." Respecting the single objection to the direct method expressed in your editorial—viz., the liability of its inducing the employment of excessive force—I have observed such a general tendency in unprofessional persons to only half do whatever they attempt in the handling of patients, I thought it important to make allowance for this tendency in the printed forms for general use.

I trust it will be fully understood that in the observations I have now made I imply no complaint of the Medico-Chirurgical Society's Report as a preliminary one. I have made them rather in anticipation of such fuller reports as may follow, and in the hope expressed by Mr. Erichsen, who, while thanking the Committee for so much of their report as had that evening been received, trusted, as President of the Society, that "their further observations would lead them to wider and more definite conclusions."

I am, Sir, yours truly,

London, June 28th, 1881. B. HOWARD.

"ETIOLOGY AND CLINICAL BEARINGS OF THE GERM THEORY OF DISEASE."

To the Editor of THE LANCET.

SIR,—Though the words of Dr. Harley (THE LANCET, June 4th, p. 904), "since the days of Spallanzani the spontaneous generation theory has been resuscitated on an average once in every twenty-five years," do not actually imply that he was the originator of this theory, they yet hint as much, and that, too, is the popular estimate of the situation. Even medical men write at times as if his claims to this distinction were unassailable, and such being the case, it behoves us to inquire into the matter and see what foundation there is for this assumption. That this view is, however, erroneous, admits, I think, of no reasonable doubt, as I hope to show further on, and meantime we may safely assert that the question has been agitated in one shape or another from the era of Democritus to that of Diderot, Des Cartes, and Dr. Bastian.

But we need say no more of this feature of the case at present; I only recall these incidents to show the vitality of the belief, and I can well remember the time when, though it is now many years since, having plaited hairs that were plucked for that purpose from a horse's tail in the little puddles that were left by rain, I waited patiently with other boys of like age and aspirations till, as we then confidently believed, they were turned into eels. That small wriggling creatures like eels did appear in due course in these ponds is certain, but whence they came or how they were propagated I did not then stop to inquire, and indeed the phenomenon is still a puzzle to me.

Discussing the origin of things, Manu, who wrote, according to Sir William Jones, before Solon or even Lycurgus was born, and whose Institutes are still believed by one of the oldest religious organisations in the world to be divinely inspired, laid it down as an axiom ("Haughton's Translation," pp. 6, 7), that "from hot moisture are born biting gnats, lice, fleas, and common flies; these, and whatever is of the same class, are (he continues) produced by heat," and many things occur even in these enlightened or sceptic days in Hindustan which are all but inexplicable on any other hypothesis. Anyhow, this doctrine or superstition is believed by millions in that country to this very hour.

Writing several centuries later, Pliny said, "Caii Plinii Secundi Hist. Nat." (Tauchnitz Ed.) vol. iii., p. 317, that "Diodotus in empiricis etiam pediculos facere ocini cibum;" and a much worthier man than either of these, the celebrated Bishop of Hippo, who, as I believe, foreshadowed the hypothesis of development twelve centuries before Darwin, uphold a similar theory. Commenting on the sexual constituents of the Ark, St. Augustine says, "De Civitate Dei," Pars Secunda, Tom. iii., p. 254, "Præscriptum est enim, atque definitum masculus et fœmina erunt. Alia sunt quippe, quæ de quibusque rebus sine concubitu ita nascuntur ut postea concumbant et generent sicut muscæ, alia vero, in quibus nihil sit maris vel fœminæ sicut apes;' and I have, I fancy, seen very similar passages in Lucretius and Cicero, "De Natura Deorum."

Your obedient servant,

Ashton-under-Lyne, June 9th, 1881. W. CURRAN.

P.S.—There is a very interesting note on this subject in Mr. Lecky's able "History of Rationalism," vol. i., pp. 375-6, in which he represents one Vives (a Spanish theologian) and Van Helmont as extracting mice "ex sordibus sine concubitu."

To the Editor of THE LANCET.

SIR,—In the last issue of THE LANCET, page 1023, the following paragraph appears:—"It (i.e., influenza) is said by some Frenchmen to be due to the fungoid mould called the Coprinus domesticus; while the common thrush in the mouths of children—the muguet of the French—is thought to be due to the Botrytis bassiana, the same kind of fungus which produces the potato blight and the vine disease, as well as the epidemic cutaneous diseases of salmon and silkworms." Coprinus domesticus (Fr.) can scarcely be called a "fungoid mould," seeing that it belongs to the Agaricini, the same order which includes the common mushroom, and that it has a pileus two inches broad and a stem two to three inches high. A description of it will be found in Cooke's "Handbook of British Fungi," page 168, and an excellent figure by Mrs. Hussey, in her second series of "Illustrations of British Mycology," plate 18. It is not a very common fungus, but in May, 1876, I received from my friend, Mr. W. Bruce Clarke, F.R.C.S., a specimen which grew on the bandages applied to a case of excision of the knee in one of the London hospitals.

Botrytis bassiana (Bals.) is the fungus which produces the silkworm disease. Peronospora infestans (Mont.) is one fungus which causes the potato blight. Oïdium Tuckeri (Berk.) is the fungus which produces the vine disease; while Saprolegnia ferox (Kütz.) is the organism which produces the salmon disease. These last four fungi are as distinct and well known specific forms as any that exist.

I am, Sir, yours truly,

King's Lynn, June 27th, 1881. CHARLES B. PLOWRIGHT.

IRELAND.

(From our own Correspondent.)

ACCORDING to the scheme for the organisation of the Royal University of Ireland, all candidates for matriculation this year must forward their names not later than Aug. 15th, which will permit but little time for Parliament to deal with the matter so as to enable the Senate to carry out the scheme this year. Lord Carlingford has, however, stated that he will before long introduce a short Bill into the House of Lords for the purpose of charging upon the Irish Church Fund an annual sum, sufficient to enable the Royal University to begin its operations this year.

The necessity for reducing the number of beds in use in the Meath Hospital, Dublin, came before the committee of that institution last week. The subject was under considera-

tion on May 9th, and was then postponed in the hope that subscriptions from the benevolent would enable the governors to keep all the beds open. This expectation not being realised a resolution has been adopted, that in consequence of the financial state of the hospital the number of beds available for use shall be limited to seventy-five—instead of ninety-three as at present—for the next three months. The generous offer of Lord Brabazon of a convalescent home at Bray, for the use of the patients, has been accepted by the committee, who are endeavouring to raise a special fund to meet the necessary working expenses so as not to interfere with the general funds of the hospital.

The King's Professorship of Materia Medica in the School of Physic, Trinity College, vacant by the resignation of Dr. Aquilla Smith, will be filled up on St. Luke's Day (October 18th), when the annual election of office-bearers of the Royal College of Physicians will take place. It is most probable that the College will select as a suitable successor Dr. Walter G. Smith, Physician to the Adelaide Hospital, for the professorship just vacated by his father. The candidates for the licence in medicine of the College of Physicians are exceptionally numerous, no less than thirty-three having entered their names for the examinations, which are being held this week.

Mr. William Ireland Wheeler, Surgeon to the City of Dublin Hospital, is a candidate for the Vice-Presidency of the Royal College of Surgeons in Ireland. The election is fixed for next June, and very probably a contest will take place, as it is rumoured that another member of Council has already been canvassing for the office.

At a meeting of the Newtownards Dispensary Committee held on Saturday last it was stated that during the past three months there had not been a case of fever, small-pox, or scarlet fever brought under the notice of the medical officer.

The deaths recorded in Belfast for the month of June amounted to 327, being equal to an annual rate of 20·4 per 1000 inhabitants. The births during the same period were 584.

It is stated that Mr. Edward Cecil Guinness has promised to defray the cost entailed by the effectual drainage of St. Patrick's Cathedral, Dublin.

Obituary.

DR. MAURICE RAYNAUD.

DR. MAURICE RAYNAUD, who had been chosen to deliver the address in French at the forthcoming Congress, died suddenly on the 29th of June. Born in 1834, Raynaud became *interne* of the Paris hospitals in 1857, and graduated five years later, taking Local Asphyxia, and Symmetrical Gangrene of the Extremities as the subject of his inaugural thesis. The same year he sustained the two theses for the *doctorat-ès-lettres*, the Latin one being entitled "De Asclepiade Bithyno Medico et Philosopho," and the French dissertation on "Les Médecins au Temps de Molière." The latter work, which has subsequently gone through several editions, attracted considerable notice at the time, and stamped its author as a cultivated physician. In 1865 Dr. Raynaud obtained the post of Physician to the hospitals, and in 1866, with a thesis on Revulsion, he become Agrégé of the Faculty, thus attaining all that could be achieved by work and perseverance. Dr. Raynaud was not a professor, and never would have been elected to this post. A fervid Catholic, he took no trouble to hide his conviction, and the slur of clericalism was sufficient to prevent his nomination by the Faculty to the chair of History of Medicine, for which he was so admirably fitted. The injustice of this exclusion was, however, recognised by the profession at large, and compensated in some degree by a seat at the Academy. In addition to the works already mentioned, Dr. Raynaud had written numerous articles for the "Dictionnaire de Médecine," and was a constant contributor to many periodical reviews.

DR. GUSTAVE CHANTREUIL.

WE have to record the death of Dr. Gustave Chantreuil, one of the most rising accoucheurs of Paris, who was carried off on the 30th June by an attack of peritonitis, said to have been caused by drinking a glass of iced beer on his way home from an anxious and fatiguing obstetrical operation. Notwithstanding the large practice which his professional skill together with his pleasant and genial manner, had secured, Chantreuil was an indefatigable worker. Besides a number of original memoirs and lectures on obstetrical subjects, he was the translator of Simpson, and, together with Professor Tarnier, he was writing a complete treatise of midwifery, of which the first part has already been published. His death, at the early age of forty, will be a serious loss to the profession.

C. W. M. BLOXHAM, M.R.C.S.

IT is with much regret we record the death on June 8th of Charles William Milnes Bloxham, of Halesowen, Worcestershire, aged fifty-nine years. A student at Birmingham and St. Thomas's, he obtained the diploma of member of the College of Surgeons of England, and became a licentiate of the Society of Apothecaries in the year 1848. Immediately after qualifying he entered into partnership with his father in his native town, where for nearly a century his forefathers had practised. Subsequently to the death of his father he was appointed medical officer to the Halesowen parish of the Stourbridge Union. At the time when the volunteer movement began, he took a lively interest in the formation of a local corps, and for a long period acted as a non-commissioned officer in the company. He held the union appointment up to the time of his death, in all a period of over twenty-five years. Truly he died in harness, for he visited patients up to within a week of his death, when he was obliged from increasing weakness, the result of long-standing disease, to confine himself to his bed.

Medical News.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.—The following gentlemen passed the Primary Examination in Anatomy and Physiology at meetings of the Board of Examiners on Monday, Tuesday, and Wednesday:—

Granville Jameson, Edinburgh; Thomas G. Lyon, St. Thomas's Hospital; Thomas R. Dupuis, Kingston, Canada; Henry S. J. Brooks, Dublin; Fitzgerald U. Anderson, Edinburgh; Richard R. Weir, Aberdeen; Rankine Dawson, McGill College, Toronto; M. D. Karanjia, Bombay; G. R. M. Graham, Melbourne and Dublin; Herbert Whyte and Alfred P. Rainbird, Guy's Hospital; Victor E. Sutcliffe, Robert Smailes, and George F. Stericher, Leeds; William M. Buxton, Newcastle-on-Tyne; William H. Dutton, Melbourne and Edinburgh; Alfred Fisher, Liverpool; Arthur W. Hare, Edinburgh; Ernest Annacher, Manchester; George A. J. Walton and Robert W. Quennell, St. Bartholomew's Hospital; Allen Perry, London Hospital; Harry E. H. Matthews, William Carmichael, J. McFarlane Clarke, Septimus Palmer, Walter Hurst, and William F. Dearden, Manchester; Alfred Hanson, University College; Frederic Mercer, Liverpool; Edwin C. Garman, Birmingham; John T. Parsons, Newcastle-on-Tyne; Robert Beattie, Belfast and Galway; Horace Hartley, St. Thomas's Hospital; Robert P. Wilde, Liverpool; John Jenkins, Bristol; James J. G. Whittendale, Birmingham; G. G. Howitt, Newcastle-on-Tyne; H. J. Hillstead, Guy's Hospital; A. Smith, St. Thomas's Hospital, and W. J. Tilley, University College.

UNIVERSITY OF OXFORD.—The following gentlemen passed the First M.B. Examination at a meeting of the Examiners on July 1st:—

Chadwick, Chas. Montague, B.A., Oriel College and London Hospital.
Dixey, Frederick Augustus, B.A., Wadham College and University College Hospital.
Ellison, William Augustine, B.A., University College and St. George's Hospital.
Gresswell, A., B.A., Christ's Church and St. Bartholomew's Hospital.
Growse, William, B.A., Pembroke College and Guy's Hospital.
Kershaw, James Edward, B.A., University College and St. Thomas's Hospital.
Peck, Robert Holman, B.A., Exeter College and University College Hospital.
Phillips, Francis Barclay W., B.A., Balliol College and Guy's Hospital.

UNIVERSITY OF DUBLIN.—The following degrees were conferred last week by Earl Cairns, Chancellor of the University:—

BACHELOR IN MEDICINE.—Thos. Arthur Baldwin, Edward Cochrane Thomas Donnelly, Thomas James Dowse, William Solomon Elliott, Charles Gloster, Donald Grant, Thos. W. O'Hara Hamilton, Dawson Henry, Edw. Gordon Hull, Achmuty Irwin, James Murray Irwin, Francis John Jencken, Thomas White Lewis, William C. Lucas,

William Ffennell M'Carthy, Alfred Miller, John W. Macquillan, Reginald Lawson Moseley, Thos. Myles, Augustus Nickson, Henry B. Pope, J. Allman Powell, Thomas Stanton, Jonas C. Stawell, Augustus W. Woodroofe.

BACHELOR IN SURGERY.—Edward Cochrane, Thomas Donnelly, Wm. Solomon Elliott, Donald Grant, Charles Gloster, Thomas W. O'Hara Hamilton, Edward Gordon Hull, Jas. Murray Irwin, Francis John Jencken, Wm. Ffennell M'Carthy, John Macquillan, Alfred Miller, Thomas Myles, James Johnston Robinson.

DOCTOR IN MEDICINE.—Wm. Hume Hart, John Charles Hogan, John Francis Houghton, Alfred Hubert Kelly, Achmuty Irwin (Honoris causâ).

MASTER IN OBSTETRICS.—Thomas Donnelly, James Murray Irwin.

LICENTIATE IN MEDICINE.—Reginald Moore, Edw. Cuthbert Nangle, Ludovic Tarleton Young.

LICENTIATE IN SURGERY.—Reginald Moore, Edw. Cuthbert Nangle, Ludovic Tarleton Young.

APOTHECARIES' HALL.—The following gentlemen passed their examination in the Science and Practice of Medicine, and received certificates to practise, on the 23rd and 30th of June:—

Kilham, Charles Speight, Millhouse, near Sheffield.
Clark, William, Wotton, Gloucester.
Inger, John William, Nottingham.
Pike, Charles James, Hobart, Tasmania.

At the recent examination for the prizes in Botany given annually by the Society to medical students, the Gold Medal was awarded to James Rocheid Forrest (St. Bartholomew's Hospital), and the Silver Medal to William Ayton Gostling (University College).

A NEW Hospital for Sick Children at Brighton is to be opened shortly by the Prince and Princess of Wales.

SANITARY INSTITUTE OF GREAT BRITAIN.—The anniversary meeting of the Institute will be held in the theatre of the Royal Institution, Albemarle-street, on July 14th, at 3 P.M., when an address will be delivered by the Chairman of Council, Prof. De Chaumont, entitled "Modern Sanitary Science," and the medals and certificates awarded to the successful exhibitors at the exhibition at Exeter, in 1880, will be presented.

DURHAM UNIVERSITY MEDICAL GRADUATES' ASSOCIATION.—The first annual meeting of the above Association was held in the Divinity Lecture-Room of the University of Durham on the 28th ult., when a code of by-laws was framed and other business transacted. The members afterwards dined together in the hall of University College. The next annual meeting will be held in London. The following are the officers for the ensuing year, 1881-82:—President: Dr. Philipson. Vice-Presidents: Drs. Luke Armstrong and W. Travers. Council: Drs. Arnison, H. T. Bowman, W. J. Tyson, Bedford Fenwick, Shadforth Morton, W. S. Porter, D. Drummond, W. Robinson, R. H. Wilson, J. R. Dodd, S. Fielden, G. P. Goldsmith. Hon. Sec. for the North and Treasurer: Dr. W. P. Mears. Hon. Sec. for the South: Dr. R. H. Milson.

Medical Appointments.

Intimations for this column must be sent DIRECT *to the Office of* THE LANCET *before 9 o'clock on Thursday Morning, at the latest.*

BIRCH, G., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer for the First District of the Hackney Union.

BRADBURY, J. B., M.D., F.R.C.P.L., has been reappointed Physician to Addenbrooke's Hospital, Cambridge.

BRICKWELL, B. A., M.R.C.S.E., L.S.A.L., has been reappointed Medical Officer of Health for the Amersham Union.

BROWN, M. L., M.B., has been appointed Junior Assistant Medical Officer to Hayward's Heath Asylum, vice Maclean, resigned.

CHESHIRE, Mr. H. F. L., has been appointed Public Analyst for the Borough of Hastings.

DE RENZY, A. C. C., L.R.C.S.I., L.K.Q.C.P.I., has been appointed House-Surgeon to the Stourbridge Dispensary, vice J. P. Fennell, L.R.C.S.I., resigned.

FIRTH, C., M.B., F.R.C.S.E., has been appointed Medical Officer for the Eighth District of the Norwich Union.

FOTHERBY, H. A., L.S.A.L., has been appointed Resident Clinical Assistant to the East London Hospital for Children.

GLASIER, —, M.D., has been appointed House-Surgeon of the Bolton Infirmary.

JACKSON, D., M.D., L.F.P.S.G., has been reappointed Medical Officer of Health for the Hexham Urban Sanitary District.

KELLAND, J., M.B., C.M., L.R.C.P.Ed., has been appointed Medical Officer to the Alderbury Union, vice Bennett, resigned.

LETT, F., L.R.C.P.Ed., M.R.C.S.E., L.S.A.L. has been appointed Medical Officer for the East Woolwich District of the Woolwich Union.

LIDIARD, S. R., M.R.C.S.E., has been appointed Resident House-Surgeon to the Darlington Hospital, vice Sawyer, resigned.

LLOYD, J., F.R.C.S.E., M.B., M.S., has been elected Casualty Surgeon to the Queen's Hospital, Birmingham, vice B. May, F.R.C.S., appointed Surgeon.

MACKINLAY, J. G., L.R.C.P.I., M.R.C.S.E., has been appointed Ophthalmic Surgeon to the Royal Free Hospital, vice G. A. Critchett, resigned.

MASON, G., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer of Health for the Wisbeach Urban Sanitary District.

MILLS, R. J., M.B., C.M., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer for the Second District of the Norwich Union.

PARKER, W. R., B.A., M.B., M.R.C.S.E., has been appointed Assistant House-Surgeon to the Northern Hospital, Liverpool, vice G. G. Hamilton, promoted.

PARROTT, E. J., L.R.C.P.Ed., M.R.C.S.E., has been appointed Medical Officer for the Cranford District of the Chertsey Union, vice Bullock, resigned.

POPE, E., M.R.C.S.E., L.S.A.L., has been appointed Medical Officer to the Sanitary Hospital at Aldbury, Great Berkhampsted.

THOMAS, E. T., L.R.C.S.I., has been appointed Medical Officer to the Rochester Amalgamated Friendly Society's Association.

THORP, S., M.R.C.S.E., L.S.A.L., has been reappointed, for one year, Medical Officer for the Second District of the Halstead Union.

WARD, G. S., L.R.C.P.Ed., L.R.C.S.Ed., L.S.A.L., has been appointed Medical Officer for the Fifth District of the Hertford Union, vice Dunn, resigned.

WILLIAMS, J. A., M.B., C.M., has been appointed a House-Physician to the London Hospital, vice A. R. Oxley, B.A., M.R.C.S.E., L.S.A.L., whose term of office has expired.

Births, Marriages, and Deaths.

BIRTHS.

BATT.—On the 1st inst., at The Limes, Witney, Oxon., the wife of C. Dorrington Batt, M.B. Lond., of a son.

CABLE.—On the 1st inst., at Royal-hill, Greenwich, the wife of G. H. Cable, M.R.C.S.E., of a son.

MACARTNEY.—On the 1st inst., at Dublin, the wife of Surgeon-Major J. Macartney, M.D., Army Medical Department, of a daughter.

MAYBURY.—On the 13th ult., at Mile-end-terrace, Portsmouth, the wife of Aurelius Victor Maybury, M.D., of a son.

SCHAFER.—On the 29th ult., at Barham Wood, Elstree, Herts, the wife of E. A. Shäfer, F.R.S., of a son.

UTTING.—On the 3rd inst., at The Woodlands, Anfield, Liverpool, the wife of John Utting, M.R.C.S.E., of a son.

WALLACE.—On the 19th ult., at Cardiff, the wife of Thos. Wallace, M.D., of a daughter.

MARRIAGES.

HAY—SHEPHERD.—On the 28th ult., at the Parish Church, Bridport, William Henry Hay, M.D., of Bridport, to Grace Elizabeth (Lillie), youngest daughter of W. D. Tucker, and widow of A. C. Shepherd, of Askerswell.

LAWSON—NAYLOR.—On the 6th inst., at Everton Parish Church, by the Rev. H. F. Ramsay, Vicar of the Parish, Robert Lawson, M.B., C.M., F.R.S.E., H.M. Deputy Commissioner in Lunacy for Scotland, to Sara Jane, elder daughter of William Naylor, of Everton, Nottinghamshire.

MARSHALL-ALLEN—MCCOMBIE.—On the 26th ult., at St. Mary's, Paddington, Robert Marshall-Allen, F.R.C.S.E., of Welbourn Hall, Grantham, Deputy Inspector-General of Hospitals, A.M.D., to Mary, elder daughter of the late Hon. Thomas McCombie, M.L.A. & M.E.C., of Melbourne, Australia, brother of the late William McCombie, of Tillyfour, Aberdeenshire, N.B.

TURNER—LINGEN.—On the 5th inst., at St. Paul's, Tupsley, by the Rev. J. H. Barker, M.A. (uncle of the bride), assisted by the Rev. T. Canning, M.A., Vicar, and the Rev. G. B. Bennett, M.A., Vicar of St. Peter's, Thomas Turner, of Hereford, to Ellen Mary, eldest surviving daughter of the late Charles Lingen, M.D.

DEATHS.

ALFORD.—On the 5th inst., at 61, Haverstock-hill, N.W., from injuries received on the Midland Railway, Stephen Shute Alford, F.R.C.S., aged 60. American papers please copy.

BIDDLE.—On the 2nd inst., at Addison House, Edmonton, Henry Cooper Biddle, M.R.C.S.E., aged 46.

JENKINS.—On the 15th ult., at Castle Green, Llansawel, Evan Jenkins, L.R.C.P.Ed., L.R.C.S.Ed., L.S.A.L., aged 40.

PEATSON.—On the 24th ult., at Manchester, J. C. Peatson, M.D.

PURNELL.—Recently, at Gunnersbury, Thomas Purnell, M.D., L.R.C.P.Ed., aged 64.

TWEDDELL.—On the 1st inst., Augusta, younger daughter of the late H. M. Tweddell, Deputy Inspector-General of Hospitals, Bengal Army.

WHITSED.—On the 25th ult., at Twickenham, Middlesex, from typhlitis, after a week's illness, John Whitsed, M.B. Edin., M.R.C.S.E., aged 26.

N.B.—*A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths*

METEOROLOGICAL READINGS

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET OFFICE, July 7th, 1881.

Date	Barometer reduced to Sea Level, and 32° F.	Direction of Wind	Dry Bulb	Wet Bulb	Solar Radia in Vacuo	Max. Temp Shade	Min. Temp	Rain fall	Remarks at 8.30 A.M.
July 1	30·08	S.W.	68	60	116	83	55	..	Fine
,, 2	30·12	N.E.	67	58	103	77	58	..	Fine
,, 3	30·13	N.W.	73	59	117	84	58	..	Fine
,, 4	30·23	W	73	65	121	90	62	..	Fine
,, 5	30·13	N.E.	76	69	122	93	65	..	Hazy
,, 6	29·72	S.W.	68	64	86	69	64	0·58	Cloudy
,, 7	30·13	W.	59	51	98	67	49	0·10	Fine

Notes, Short Comments, and Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "To the Publisher."*

EXAMINATIONS AT THE ROYAL COLLEGE OF SURGEONS.

THE following were the questions on Anatomy and Physiology submitted to the candidates (upwards of two hundred in number) on the 1st inst., and now undergoing their primary examinations for the membership of the Royal College of Surgeons—namely, on Anatomy:—

1. Describe the ilium.
2. Describe the articulations of the dorsal vertebræ one with another, and also their articulations with the ribs.
3. Describe the course and relations of the ulnar artery, and its branches.
4. Describe the right auricle of the heart.
5. Give the dissection by which you would expose the whole of the anterior surface of the adductor magnus muscle.
6. Describe the lumbar plexus of nerves, and its branches, so far as they lie within the abdomen.

Candidates were required to answer four, and not more than that number, of the six questions, between the hours of 1 and 3 o'clock.

The following were the questions on Physiology, four out of the six to be answered between the hours of 4 and 6 o'clock:—

1. Describe the distribution of the bloodvessels in the kidney. Under what physiological conditions does the blood pressure in the renal arteries vary? What effect have such variations on the secretion of urine?
2. How is the act of mastication performed? What nerves and nerve-centres are engaged in its performance?
3. Give an account of the innervation of the heart.
4. What is the composition of the blood? How are the corpuscles renewed?
5. Describe the structure and uses of the pleura. How are the visceral and parietal layers kept in apposition?
6. Explain what is meant by sound-vibrations, and describe the manner in which they are transmitted to the auditory nerve.

HOSPITAL ACCOMMODATION IN NORTH LONDON.

To the Editor of THE LANCET.

SIR,—My attention has only just been drawn to the proposal mentioned in THE LANCET for founding a North Metropolitan Hospital. It will not perhaps be out of place to remind your readers that ever since 1862 there has been in existence at No. 12, Bell-street, Edgware-road, a free dispensary for sick children, an institution which has really been doing solid and good work in the midst of a poor and crowded neighbourhood. The number of patients treated last year amounted to 4184. The committee, considering that the usefulness of the dispensary might be much increased by the addition of a small hospital, have lately been appealing to the public to aid them in the transformation of the premises in Bell-street by slightly altering the building and supplying the necessaries for the admission of twenty-five patients. Let me add that Sir Wm. Jenner, Dr. Ringer, and Mr. Quain are on our consulting staff, and that Dr. Colcott Fox and Mr. Marcus Gunn respectively attend to the skin and eye departments.

I am, Sir, your obedient servant,

WYNDHAM A. BEWES, Hon. Sec.

New-square, Lincoln's-inn, W.C.,
July 3rd, 1881.

WHITE COVERS FOR UMBRELLAS.

WITH a temperature more characteristic of the torrid than the temperate zone any expedient will be welcomed that is calculated to mitigate the oppressive and sometimes serious effects of the sun's rays. To this end Messrs. Hatchman and Co., of Wood-street, Cheapside, offer a contribution in the shape of a loose white cover for the umbrella. The device is, of course, not new, but in this case presents a feature of novelty in that the covering can be adapted to an umbrella of almost any size. Thus a difficulty which formerly limited the use of white covers is removed.

CHRYSOPHANIC ACID IN PSORIASIS.

To the Editor of THE LANCET.

SIR,—Perhaps the following account of a case lately in the Leicester Infirmary, under the care of Dr. Blunt, will be of interest in showing that, at any rate in all cases, chrysophanic acid does not act constitutionally.

A patient, aged eleven, was admitted into the infirmary on April 9th suffering from psoriasis of five months' standing, fairly disseminated over the trunk and limbs. For the first week one drachm of turpentine to the ounce of vaseline was applied to the right arm and leg, and chrysophanic acid of the same strength to the left arm and leg, while nothing was put on the trunk. On April 14th, as the left leg and arm had improved more than the right, turpentine pure was applied to the latter, but it had caused so much irritation by the 16th of April that vaseline alone was applied for three days. During this time, ten days in all, there was no appreciable difference in the affection on the trunk from that which it presented on the day of admission, while the limbs, especially the left, showed a marked improvement. On April 19th the chrysophanic acid was applied to all the limbs and the trunk, and from that day there was a marked general improvement, though the left limbs, right limbs, and the trunk got well in the order in which the chrysophanic acid was applied to them locally. On May 16th the affection had practically disappeared.

I am, Sir, yours faithfully,

Leicester Infirmary, July 5th, 1881. CHARLES J. PIKE.

A Surgeon (India).—The case of premature baldness seems to be a slight form of the chronic congestion and seborrhœa described by Kaposi as alopecia furfuracea. Externally greasy and astringent applications should be applied, and sometimes the addition of weak stimulants does good, though the latter are, as a rule, better reserved for stimulating the growth of the hair after the cure of the seborrhœa. Internal remedies directed against chronic gastric disturbance are frequently required, or tonic drugs, but the cause seems in some cases to be purely local.

Dr. W. Wilson (Pendleton).—The paper is marked for insertion.

430.—We must decline to reopen the question.

Dr. M'Bride's paper will appear in an early number.

AN EXTREMELY RARE CONDITION OF THE HAIR.

To the Editor of THE LANCET.

SIR,—So far as I know, the condition I have to describe has never been recorded before. The case is that of a youth of sixteen. The hair of his scalp is, as to the left half of the scalp, piebald in a very curious manner. It presents exactly the appearance of the back of a tortoiseshell cat. The condition dates from birth.

A piebald condition of the scalp where the natural colour of the hair is variegated with patches of white hair is by no means very rare either as a congenital deformity or as an acquired condition due to various causes—some known, such as persistent neuralgia of the region, and some altogether unknown. But the condition here in question is, in my experience, unique, and I should scarcely have supposed it to be a possible one.

Since I at first saw only the affected side of the boy's head I thought he was an auburn-haired person who, having, or supposing himself to have, ringworm, had applied ink to various parts of his scalp, and I was strengthened in this surmise by noticing that his face presented the peculiar complexion special to auburn-haired persons. The patches of hair that are light-coloured present the precise tint of true auburn hair. The patches that are dark are of a dark-brown colour. The patches are abruptly limited, so as to give them a very accentuated appearance. The opposite (right) side of the scalp is uniformly a dark brown—namely, of exactly the tint of the brown patches on the left side of the scalp.

No possible cause seems to have existed for this phenomenon, nor was any alleged either by the boy or his friends, not even a story which I quite expected, of his mother having been frightened by a tortoiseshell cat. The only fact notable about him is that he is deaf and dumb, and so is one of his brothers, but neither this brother nor any other of his four or five brothers and sisters are at all piebald, nor are any other of his relations.

I should be glad to know if anyone else has ever observed so extraordinary a phenomenon, and in return I shall be happy to give the boy's address to any practitioner who may desire to investigate the matter further.

I am, Sir, obediently yours,

June, 1881. BALMANNO SQUIRE.

MEDICAL MISSIONS.

EIGHT students of the Edinburgh Medical Missionary Society are about to start for various stations in different parts of the world. Six of these gentlemen already possess degrees or diplomas, and the remaining two expect shortly to obtain qualifications. The medical mission scheme is, we are informed, exhibiting unwonted vitality. "Twenty years ago," says a correspondent, to whom we are indebted for the above facts, "there were fewer than thirty qualified medical men agents of missionary societies; now there are 100. The most prominent of recent successes in every field, whether China, India, Africa, Central Asia, or the Isles of the Pacific, have been achieved by this agency. While Christian missions have been furthered, science has profited by the dispersion of skilled observers to parts of the world hitherto almost or altogether unknown to Europeans. A new sphere is thus opened to medical men, one not devoid of difficulty or of danger, and one little remunerated, but one full of opportunities for doing good to suffering humanity, and full of scientific interest."

A NOTE ON SNAKE-BITE.

To the Editor of THE LANCET.

SIR,—A grass-cutter was bitten on the foot by a snake. I saw him two hours after; right foot swollen and painful, two small punctures at the seat of bite, pain running up leg to groin. No bad symptoms Ordered a poultice. Next day the pain had extended up the right side to the right axilla, and there were pain and great swelling of the left forearm and elbow. Ordered hot fomentations. The pain and swelling soon subsided, and in a few days the man was well.

It is interesting to notice in this case the general distribution of the poison through the lymphatics and the length of time it took for all the effects of the poison to show themselves.—I am, Sir, yours, &c.,

S. Afghanistan, April 28th, 1881. S. L. D.

SWALLOWING A MARBLE: SOLID DIET TREATMENT.

To the Editor of THE LANCET.

SIR,—As a constant reader of your journal, I venture to enclose for insertion therein the following short notes:—On Sunday, May 8th, at 6.30 P.M., I was hurriedly called to see A. P——, aged three years, who it was stated had while at play swallowed an ordinary stone marble. I found the boy in a state of great agitation, probably caused by the somewhat frightened state of those around him. I told his mother that there was not any great cause for alarm, and ordered solid food—viz., biscuits and dry bread, with but very little fluid, to be given during the next eighteen hours. At the expiration of this time I ordered one dessertspoonful of castor-oil, the result being that in about two hours the marble was passed, more or less impacted in solid fæcal matter.

This case may be a matter of but little interest, still I think it tends to prove that the "solid diet" treatment in such cases is correct, because had this boy been treated with oil or other purgatives it is probable that all evacuations might have passed and allowed the marble to remain by chance in some convolution of bowel, terminating in what we cannot say. I am, Sir, yours faithfully,

July, 1881. R. R. MERRY, L.R.C.P. Lond.

Constipation.—Tin is sometimes present in solution in preserved vegetables and fruit, but we have not heard of lead having been detected. An alloy of tin and lead would undergo but slight alteration in vegetable acids out of contact with air, and we are not inclined to think the danger of lead poisoning from this cause a serious one.

A QUESTION OF DOMESTIC HYGIENE.

To the Editor of THE LANCET.

SIR,—I beg to call your attention to the insanitary practice of many housemaids—I mean the practice of using only one cloth for wiping all the vessels in a bedroom, including the tooth-glass. This cloth they take from room to room till it is too wet to use any longer, or till the rooms are finished. I have seen this done so repeatedly in first-class hotels and lodgings, and even in private houses (where the mistress would have been horrified if she had known it), that I have come to the conclusion that it is more frequent among housemaids than the only cleanly plan of keeping three, or at least two cloths, for the different purposes—one for the tooth-glass and bottle, one for the washstand, and one for the remaining vessels. I have been shocked to find sometimes, on remonstrating with housemaids, that it has been impossible to make them see that they were doing anything objectionable. I, however, cannot but think that germs of disease may often be spread in this way, and that it must be a very unhealthy thing, if cleanliness is healthy. When I say that it may be possible to do with two cloths for the bedrooms, it is only on condition of a clean one being used first for all the tooth-glasses, and afterwards for all the washstands; but in hotels, where the bedrooms are vacated at different hours, this is impossible, and three cloths must be kept if cleanliness is to be observed. They should be of different patterns, so that no mistake can be made as to what purpose they are to be used for. I believe very few ladies, and perhaps no gentlemen, are aware of the extreme commonness of the practice to which I draw your attention, but I think it is time that it should be exposed. I am, Sir, yours, &c.,

June, 1881. AN OBSERVER.

ALLEGED DEATH FROM CHLORATE OF POTASH.

THE *Belfast News Letter* of June 27th contains a very indistinct account of the death of a worthy constable from taking a quantity of chlorate of potash internally instead of a seidlitz powder. So we read. But the report is most confused. Death from a dose of chlorate of potash is not very common or intelligible. We should be glad to hear more particulars.

THE HEADS OF THE PEOPLE.

To the Editor of THE LANCET.

SIR,—It appears to be fairly proved by your correspondents in this week's issue that the diminution in the size of hats worn is due to the present fashion of hair-cutting. This is carried to the greatest extreme by grooms, &c., and is probably more general in Dublin than in Cork.

The difference in the size of hats worn dependent on the length of the hair is from ½ in. in thin-haired people to 1½ in. in those who are thickly thatched.

It is a matter of popular belief that wearing the beard induces baldness. If this is so, the change of fashion in this respect, by tending to diminish the amount of cranial hair, would also diminish the size of hat.

Brain-workers are, as a rule, thinly thatched, and the increased proportion of these in the population would have the same effect. The diagrams of asymmetrical heads that hatters exhibit are in like manner due to the varying arrangement of the hair.—I am, Sir, yours truly,

July 2nd, 1881. M.D.

To the Editor of THE LANCET.

SIR,—It seems to me that one cause why people wear smaller hats is that they have less hair. In my young days it was not the fashion to have the head cropped as it is now, and that is, I think, quite sufficient to account for the slight difference.—I am, Sir, yours, &c.,

July 4th, 1881. G. B. B.

MEDICAL INDICES.

To the Editor of THE LANCET.

SIR,—In last week's number of THE LANCET Dr. Neale calls attention to the exact object and character of the "Medical Digest," compiled by him, and published by the New Sydenham Society. If medical men understood the nature of the book it would be far more generally used and consulted than it is. I look upon it to the busy man in practice as being invaluable, enabling him to ascertain at a glance where he may find the latest information on any subject, whether trivial or grave, relating to medicine or the allied sciences.

I remain, Sir, yours truly,

Droitwich, June 29th, 1881. S. S. RODEN, M.D. Bd.

L.R.C.S.I. will find the information he desires in THE LANCET of June 18th.

Mr. Arthur Lattey (Southminster).—We have no doubt of the value of the treatment at the institution named, but it would not be advisable to insert the letter.

Traveller (Kimberley) has not enclosed his card.

Mr. H. O'S. Keyes.—The *Veterinarian* or *Veterinary Journal* would be a more suitable medium for the publication of the cases.

DILATATION OF THE ALÆ NASI.

To the Editor of THE LANCET.

SIR,—I do not know whether it has been noticed in persons whose trachea has been severed, and communication with the head cut off, that while breathing goes on the alæ nasi work regularly, dilating with each inspiration. I made this small observation in a case of suicide I saw the other day, and connected it with the well-known fact that, in children especially whose lungs are congested, the alæ nasi work as though to admit air more freely. The case of the cut-throat would seem to show that it is a purely reflex act, caused by the obstructed lung, and in this case useless. The dilated nostril is observed also in certain cases of emotion when the breathing is interfered with, as in sudden terror or anger. I am, Sir, yours, &c.,

Queen's-crescent, Haverstock-hill, N.W., H. FLY SMITH.
June 30th, 1881.

ANTISEPTIC TREATMENT OF SMALL-POX.

To the Editor of THE LANCET.

SIR,—I have for some years treated my small-pox patients as follows. I paint the whole surface of the body with a solution of gelatine and glycerine, dissolved in diluted permanganate of potash, which not only disinfects the skin, but allays the intolerable irritation. Internally I administer a weak solution of chloride of lime, with liquor potassæ and essence of peppermint.

I may add that I have had in the last ten years forty-eight imported cases of small-pox, but in no case has it spread. Of course, revaccination has been carried on in its entirety.

I am, Sir, your obedient servant,

G. F. PRITCHARD, L.K.Q.C.P.I. & L.M.,
Port Sanitary Officer, Greenstreet, near Sittingbourne.
July 4th, 1881.

INTERNATIONAL BALNEOLOGICAL DIVISION AT FRANKFORT-ON-THE-MAIN.

To the Editor of THE LANCET.

SIR,—It may interest some of your readers whose summer travels take them through or near Frankfort-on-the-Main to know that there is at present in this city, as part of an exhibition of German patents and patterns, an International Balneological Division, especially devoted to the products of the various continental watering-places. The exhibition consists of the salts, mineral waters, artificial preparations, analyses, maps, and general descriptions of the baths in question. It is open until the beginning of October, possibly longer. Almost all European countries are represented, the chief contingent of the 169 numbers being naturally German, Swiss, and Austrian. The Hungarian and Spanish divisions are exhibited by their respective governments. The whole, including the catalogue, is carefully arranged, and well repays a visit.

I am, Sir, faithfully yours,
H. BRIDGES ADAMS, M.D.

Frankfort-on-the-Main, June 29th, 1881.

CHRISMA AS A PARASITICIDE.

To the Editor of THE LANCET.

SIR,—I should like to bring under the notice of the profession a remedy which I have found of great use in a large class of frequently intractable cases. I allude to "chrisma," which is, I believe, a derivative from petroleum. Many medical men must have been struck by the largely increased number of cases of tinea. I believe the spread of this disease is due to the massing of children at board schools. So trouble. some has this affection become that in one large school—the one at Enfield—a separate building is to be erected for the teaching of children suffering from it.

On August 29th, 1880, A. G —— came for advice, as she had been much annoyed by a slight rash. On examination I found it to be a well-marked case of scabies. I prescribed about two ounces of chrisma, and directed it to be rubbed all over the body at bedtime, and to be washed off in the morning. On next seeing the patient the disease had entirely disappeared.

I shortly after tried it in another disease due to animal parasites—viz., phtheiriasis. One application of the ointment entirely rid the patient of his tormentors. I directed the patient to use the chrisma from time to time to destroy those hatched subsequently.

In another case, where the head was literally alive with pediculi, one application at night was sufficient to banish every living specimen. The patient told me, after using the ointment, "a goodish few went down his neck." I don't know whether they were killed or merely evicted to seek "compensation for disturbance" elsewhere. After seeing the effects of the chrisma in cases of animal parasites, I was induced to try it in some few cases of disease due to vegetable parasites. The first case which presented itself was one of tinea tonsurans, which had been under treatment at various institutions for the cure of skin diseases for eighteen months. I directed the chrisma to be used like ordinary hair-grease every morning, and the head was not to be washed. In about six weeks the disease was entirely eradicated. The patient has been under my notice for several months, and is still quite free from any rash. I obtained a like result in many other cases of tinea.

In one family of three persons, all affected with scabies, a very perfunctory use of the ointment was sufficient. The great advantage of this application over all other parasiticides is its non-poisonous character. It may be used in any quantity over the whole body without producing any ill-effects. Another advantage it possesses is its cheapness. I believe it will be found of inestimable value in preventing the spread of tinea.

I am, Sir, yours truly,
ALBERT CRANE, M.D. Edin.

Clarendon-street, Eccleston-square, S.W.,
June, 1881.

"MEDICAL HEROISM."

OUR correspondent will see that we have been able to anticipate much of his information. The particulars of Dr. Lowson's diphtheria show how great was the risk at which he sought, by suction of the tube, to save his little patient. On the evening of the fourth day after the operation his throat became affected, the disease invading the right tonsil, the palate, uvula, left tonsil, and epiglottis. Six weeks from the beginning of the illness Dr. Lowson became affected with anæsthesia of both hands and feet. This lasted for two months. On returning to work he felt weak, and found his urine loaded with sugar. He was obliged temporarily to discontinue practice. We trust that the kindly influences of time and the Mediterranean will soon remove the diabetes and restore Dr. Lowson to his original health. Some fine ethical questions arise in reference to his heroic and unselfish behaviour.

COMMUNICATIONS, LETTERS, &c., have been received from—Mr. Elsworth London; Mr. Carey, Canning-town; Mr. Torrance, Newcastle-on-Tyne; Mr. Neve; Dr. Inches, St. John, N. Brunswick; Mr. Spanton, Hanley; Mr. W. A. Bewes, London; Miss Learmonth, London; Mr. Dakeyne, Leek; Dr. G. B. Beale, London; Mr. Pritchard, Greenstreet; Dr. Bridges Adams, Frankfort; Dr. Roden, Droitwich; Messrs. Cowley and Co., Hull; The Hon. F. Leveson-Gower; Dr. Sturges, London; Dr. Lowson, Palermo; Mr. Lattey, Southminster; Mr. Leatham, Coalisland; Mr. Bull, New Crossgate; Dr. Evatt, Woolwich; Dr. MacCombie, Deptford; Mr. Gopaul Chunder Roy, Beerbhoom; Dr. John Roberts, Plas Ezyr; Mr. Pike, Leicester; Dr. Lloyd, London; Mr. Shattock, London; Mr. Dea, Leicester; Mr. Keyes, Limerick; Mr. Bartholomew, Reading; Mr. Fox, Bristol; Mr. Becshall, Liverpool; Mr. Aitken, Buckhaven; Mr. Alford; Mr. Totley, Keighley; Miss Mason, Putney; Dr. Ward, Oxford; Dr. Jones, Cork; Mr. Hordley, Stoke-on-Trent; Mr. T. Cooke, London; Mrs. Wharton, Halifax; Mr. W. Wallis, London; Mr. Hurst, Eastbourne; Surgeon-Major W. D. Wilson; Mr. Mears, Newcastle-on-Tyne; Dr. Caddy, London; Mr. Walter Schröder; Messrs. Fletcher and Co.; Mr. Rorke; Mr. Eastes, London; Messrs. Mottershead and Co., Manchester; Mr. Zimmermann; Dr. Veale, Notley; Mr. Jebb; Mr. Cresswell, Oxford; Traveller; A Bradford Practitioner; Senex; B. L.; Medicus, St. Columb Minor; E. B.; M.D.; A Fifteen Years' Subscriber; &c., &c.

LETTERS, *each with enclosure*, are also acknowledged from—Mr. Walker, Doncaster; Mr. Mason, Sudbury; Mr. Warren, Dulburton; Miss Robinson, Sandwich; Mr. F. A. White, London; Dr. Logan, Uasie; Mr. Megget, Scarborough; Mrs. Surr, Montaubon; Messrs. Slades and Sons, Sheffield; Dr. Sutherland, Castletown; Dr. Leet, Rathmines; Mr. Case, Liverpool; Mr. Pearce, Bescovey; Dr. McDonald, Inverness; Mr. Turner; Dr. Moffatt, Hawarden; Mr. Ross, Dublin; Mr. Sers, Elsmere; Mr. Hordes, Cardiff; Mr. F. Orchard, London; Mr. Swan, Kentish-town; Dr. Bullock, Tunbridge-wells; Mr. Bryan, London; Mr. McMahon, Perth; Mr. Brittain, Birmingham; Mr. Gowland, Warsop; Dr. Macnally, Port Ellen; Mr. Wall, Wigan; Mr. Ross, Dublin; Mr. Johnstone, London; Mr. W. H. Williamson, London; Finzi; N. B., Barking; X. Y. Z.; Alpha, Chelsea; Omicron; M.D., Stratford; C. C.; W. C.; Medicus, Halifax; Statim, Ancoates; B. M.; C. J., Greenwich; Socius; G. P., Manchester; Medicus, Stepney; Locus; X. Y., Edinburgh; Cornwall; Tortoise; Medicus, Minchinhampton; Medicus, Sunderland; J. B., Stainhope; M.B., Wigan; Medicus, Swindon; Alpha, Worcester; &c., &c.

Eastern Province Herald, Hand and Heart, Night and Day, Italian Times, The Specialist, Hexham Courant, Labour Standard, &c., have been received.

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